

CANCER ISSUES

S.S. Abujawdeh

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Who's in Charge

- There is no Cancer Czar
- If they appoint one, it will be for his golf skills & political contacts
- The Key players are interested in financial return – not a conspiracy, just survival facts
 - Pharmaceuticals
 - Oncologists
 - Government
- Everything needs FDA approval, and FDA is.... Well... a government bureaucracy
- Result: Many “obvious” solutions missed or ignored, because the ones that can follow up have no incentive to or aren’t in charge
- <https://www.theguardian.com/science/2016/jun/12/anti-cancer-drugs-medicine-cabinet-repurposed-aspirin-thalidomide-beta-blockers>

How does that matter?

- Let us say there is evidence that Dandelion root tea can cure cancer (there is)
- Who is going to run a phase 1, 2 and 3 trial, and pursue FDA approval, to prove it? Who is going to spend \$100M to prove a common weed works? If they do, we just go to the backyard and get the cure.
- How do they get their money back?
- Meanwhile, without FDA approval, Oncologist stay mum – some even snicker (as our Liver surgeon did at Turmeric), because “there is no documented proof”
- So... Dandelion root cure CANNOT be discovered... the system doesn't allow it. Not a conspiracy, just the setup.
- Partial good news: the evidence for Dandelion root happened in Canada. Someone was able to get the government to fund a phase 1 trial to encourage local research and science – but of course they managed to make it so a cup of Dandelion Root tea cost \$10000 – it had to be “specially made”.

Known (unknown) solutions

- There are many solutions out there that are documented enough to trust, but not FDA approved. Ask an oncologist, and he'll say "there is no proof" and "don't do it, it MIGHT interfere with your treatment".
 - Herbs and Supplements
 - Repurposed drugs
- Simple solutions in initial tests – promising but not approved –
 - Do your own trials if you have access to them & they don't hurt
- And of course Insurance has to be satisfied: they wont pay even for even cheap Liquid Biopsies or virtual colonoscopies!
<https://cancercompass.com/cancer-news/article/58803.htm> although they finally pay for Aspirin! <https://www.cancertherapyadvisor.com/ras-mutation-liquid-biopsy-colorectal-cancer-accurate-test/article/775078/>

Do we really “Know” anything?

- The only “**certain**” answers on Diet and Supplements we got from many oncologists (almost unanimous): “Vitamin D, and Aspirin, and No Red Meat”. **The truth** (documented evidence)?:
 - It turns out Vitamin D doesn’t really help (2016 trial)
 - It turns out Aspirin only helps if you have PIK3CA mutation (almost cures it) and not otherwise
 - Meta-analysis of all Meat studies will confuse the hell out of you – some say Beef is ok for colon; some Beef is bad for colon, ok for Rectal; some Pork HELPS rectal!; some say the opposite – <https://www.ncbi.nlm.nih.gov/m/pubmed/25583132/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4698595/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1913932/>
- For Radiation, they say don’t take anti-oxidant supplements, including Omega3. But they recommend a diet of fish (which has 4 grams of Omega 3 per meal, 4 times Omega 3 supplements!), broccoli, asparagus, pomegranate, etc, all antioxidant foods! When pressured, the Integrated Medicine Dr says : “well, the evidence against antioxidants is **very weak**; and she’s **not sure** Omega 3 is bad, etc..”. The Liver surgeon said eat meat, while the oncologist and Integrated medicine says no! <http://blog.dana-farber.org/insight/2017/07/can-antioxidants-prevent-cancer/>
- But Fish is good – right? Lots of evidence, right? Well.... NO...
<https://www.nytimes.com/2018/11/10/well/live/vitamin-d-and-fish-oils-are-ineffective-for-preventing-cancer-and-heart-disease.html>
- There is **no definitive guide** at MSK, the premier Cancer institute, for diets or supplements for colorectal cancer, a primarily diet-driven disease! Just “general cancer” recommendations, even though diet effects can be totally different for different cancers.
- So what do you do? **No body knows**. And their default position: if any doubt or no proof (which is almost always), don’t do it. Which stops you from taking many things that can definitely help.
- What did WE do? We did **our own research**, and where evidence pointed to help (and no harm), we did it. What happened? Complete response!

Some Basics First

- Be your own advocate
 - No one else cares as much
 - Hospitals and Oncologists are notoriously unorganized (every time you meet them, you get the impression they just looked at your file just 2 minutes ago)
 - Most Oncologists don't keep (or can't keep) track of all the latest – not always specialized, and there is too much going on— Do your own research
 - Challenge the “experts” with what you hear or read
 - Keep track of your treatments ... no one else will
 - Ask, research, listen. Ask friendly specialist who can tell you honest answers and not just “party-line” dogma. Research internet – a wealth of info your oncologist wont even know about. Listen, but filter the humbug cancer stories and verify before you act.
 - Exercise, Exercise... all studies show exercise is good before, after, during treatment; strength better than cardio! <http://www.runnersworld.com/health/exercise-fights-cancer-tumors-directly> <http://www.southcoasttoday.com/opinion/20170408/letter-trust-facts-for-cancer-prevention> <http://www.newsmax.com/t/health/article/818160?section=Health-News&keywords=exercise-cancer-prevention&year=2017&month=10&date=06&id=818160&aliaspath=%2FHealth%2FArticle%2FArticleTemplate> http://www.huffingtonpost.com.au/2017/11/01/strength-training-not-cardio-helps-prevent-cancer-study_a_23263859/
<https://www.medscape.com/viewarticle/906854>

More Basics

- Genetics testing early and FAST – find out your mutations and your MSI status
 - Makes a big difference in first line treatment options and later options
 - Most Oncologists may not know the latest
 - They know if you have kRAS mutation, that you can't use Erbitux (Cetuximab) or Vectibix (Panitumumab), and Avastin is the default
 - But they think if you are kRAS wild, that Vectibix and Avastin are equivalent (2015 analysis of trial data)
 - They don't seem to all know 2016 re-analysis shows Vectibix and Erbitux superior to Avastin (by a lot) for left-side (including rectal) cancers
 - [new-retrospective-analyses-confirm-vectibix-panitumumab-treatment-provided-survival-benefit-over-chemotherapy-with-or-without-bevacizumab](#)
 - <http://www.ascopost.com/News/40569> <http://www.targetedonc.com/videos/decision-making-in-the-frontline-treatment-of-metastatic-colon-cancer>
 - If you are KRAS wild, you want Vectibix! Get your genetics done fast so you can make use of it – the % of complete responders is also higher
 - If you are MSI-High , which used to be bad news, you are in luck- KEYTRUDA will help you (but not if you are MSS (stable)).
 - And Yes, Chemo works – both neoadjuvant and adjuvant; do adjuvant within 6 weeks of surgery
<http://scienceblogs.com/insolence/2011/09/16/two-percent-gambit-chemotherapy/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4716056/#!po=35.0299>
<http://www.cancernetwork.com/oncology-journal/adjuvant-therapy-after-resection-metastatic-colorectal-cancer-clear-proof-principle-setting>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3251802/>
<http://meetinglibrary.asco.org/content/125057-144>

Basics (3)

- **Adjuvant Therapy** helps; Avastin, Vectibix & Cetuximab no good for adjuvant; Oxaliplatin helps adjuvant – Irinotecan not. Start Adjuvant 4-6 weeks after surgery – further delay hurts chances
<http://theoncologist.alphamedpress.org/content/17/2/201.full> http://www.surgonc.org/docs/default-source/fellows-articles-october-2014/timing_of_multimodality_therapy_for_resectable_synchronous_colorectal.pdf?sfvrsn=2
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4716056/> <http://www.jcancer.org/v08p1179.htm>
- **Radiotherapy** for Rectal critical.. **Long course better than short course if you are aiming for complete response.** Otherwise similar <http://ascopubs.org/doi/full/10.1200/jco.2012.42.9597>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4041550/>
https://academic.oup.com/annonc/article/25/suppl_4/iv199/2241361/581PNEOADJUVANT-TREATMENT-OF-RECTAL-CANCER-SHORT <http://gicasym.org/polish-study-supports-more-convenient-neoadjuvant-regimen-rectal-cancer> <https://www.researchgate.net/publication/263015166> Short-Course versus Long-Course Chemoradiation in Rectal Cancer-Time to Change Strategies infertility?
<https://www.labroots.com/trending/cancer/6945/drug-prevent-male-infertility-following-cancer-treatment>
- **Wait-and-see approach** ok with **rectal** tumor if good response <https://www.mskcc.org/clinical-updates/toward-curing-rectal-without-surgery> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4663384/>
<http://www.healthylivingmagazine.us/Articles/11919/>

Basics (4)

- HAI pump for liver improves 5 yr survival (from 50% to 80%); reduces recurrence in liver.
<https://www.ncbi.nlm.nih.gov/pubmed/26830685>
<http://meetinglibrary.asco.org/content/71366-103> <https://www.mskcc.org/clinical-updates/data-proves-significant-survival-advantage-hepatic-arterial-infusion-metastatic-colorectal>
- Liver and Lungs not scarier than just Liver: Anderson says survival better after resection of both!! <https://www.ncbi.nlm.nih.gov/pubmed/21700179>
- https://www.webmd.com/colorectal-cancer/ss/slideshow-colorectal-cancer-overview?ecd=wnl_can_120517&ctr=wnl-can-120517_nsl-promo-v_3&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d
- Some say speed of treatment is not critical. <https://cancercompass.com/cancer-news/article/60042.htm> I beg to differ. A few weeks delay and my son's liver tumors would have been inoperable (vein invasion). The delay in diagnosing his arm tumor almost cost him his arm and his life.
- Four basic molecular types: https://journals.lww.com/oncology-times/Fulltext/2018/03200/The_Four_Colorectal_Cancer_Consensus_Molecular.4.aspx

Standard Treatment

- Goes by NCCN rules – Oncs would be helpless without it
- <https://www.tri-kobe.org/nccn/guideline/colorectal/english/rectal.pdf>
- <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/colon-cancer-treatment-regimens/article/218158/> <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/rectal-cancer-treatment-regimens/article/218155/>
- In Europe, ESMO standards – good to compare
<http://www.esmo.org/Guidelines/Gastrointestinal-Cancers/Rectal-Cancer>
- <http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-02>
- Chemo <http://courses.washington.edu/pharm309/calculations/Lesson4.pdf>
<http://chemoregimen.com/colorectal-cancer-c-34> [http://www.clinical-colorectal-cancer.com/article/S1533-0028\(14\)00128-5/abstract](http://www.clinical-colorectal-cancer.com/article/S1533-0028(14)00128-5/abstract)
<http://www.mdedge.com/oncologypractice/article/105996/gastroenterology/adjuvant-oxaliplatin-reduces-colon-cancer>
- Colonoscopies for detection. Liquid Biopsies better, but still not widely used
<http://www.targetedonc.com/news/bloodbased-liquid-biopsy-demonstrates-88-accuracy-in-detecting-colorectal-cancers-early>

Diet, Herbs and Supplements

- Oncologists (& Surgeons) think of it as quack medicine! But change may be coming
https://www.statnews.com/2017/03/07/alternative-medicine-hospitals-promote/?s_campaign=tw&utm_content=buffer11772&utm_medium=social&utm_source=twitter&utm_campaign=twitter_organic
- Almost all treatments are natural substances – Herbs and medicines are just not FDA approved (and won't be- they are too cheap and available to be worth spending money approving and trialing)!
- Include OTC repurposed drugs
- I believe Supplements & Diet contributed at least as much as chemotherapy to my son's Pathological Complete Response (100% of tumors dead at end of chemotherapy, before surgery)
- A multitude of supplements is better than just one: multiple pathways attacked, all contributing to knocking out the cancer – similar to the approach taken with more expensive chemo & immunotherapy drugs combining them to get better effect and overcome resistance – an approach that worked for HIV ("cocktails"!)
- Many repurposed drugs & supplements do better in vivo and in vitro than chemo! But human trials are usually lacking or at least never get to stage 3 and approval.

Repurposed Drugs

- Multiple investigations ongoing:
 - <https://martin-clinic.com/?p=89>
 - <https://projects.propublica.org/graphics/cancer-drug-alternatives>
- **Metformin : YES!!**
- **Aspirin**; NSAIDs (Celecoxib, Sulindac): DEPENDS!
- **Cimetidine: YES!!!**
- Biophosphonates ???
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4530382/>
- Statins ??? No
- Eflornithine ??? Trials, too early
- **Mebendazole** - Yes
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4096024/>
 - <https://www.epainassist.com/cancer/mebendazole-a-parasitic-worm-killer-can-treat-colon-cancer>
- **G.M.C.S.F. – ??? Maybe**
 - <http://www.tandfonline.com/doi/full/10.4161/onci.28186>
 - <http://www.colorectalsurgerynyc.com/research/perioperative-cancer-treatment-results.aspx>
- **Artemisinin – Yes!**

Preventing Metastasis? Take an antacid

- **Cimetidine** (basic antacid)

- <https://coloncancernewstoday.com/2014/12/03/study-finds-antacid-used-colorectal-cancer-treatment/>
- <https://www.ncbi.nlm.nih.gov/m/pubmed/22895966/>
- “the calculated 3-year survival was 93% for CIM-treated patients and 59% for controls” – Merck would have an orgasm if it had such a drug – it also works by reducing metastasis
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4268104/>
- <https://www.ncbi.nlm.nih.gov/pubmed/22895966>
http://www.lifeextension.com/magazine/2007/5/report_cimetidine/page-01
<http://www.oncologynurseadvisor.com/headlines/cimetidine-colorectal-cancer-risk-survival-treatment/article/386136/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2375193/#!po=35.7143>
<https://www.ncbi.nlm.nih.gov/m/pubmed/14619522/?i=3&from=/7997018/related>
<http://www.nature.com/bjc/journal/v86/n2/full/6600048a.html>
- All you have to do is take Tagamet (\$4/bottle of 60 pills) 5 days before surgery, and then for a few weeks after
- Initial evidence since 1998, with many documented trials under various circumstances.
- Why aren’t we (CRC patients) FORCED to take this drug?... Hint: \$4/bottle.
- Take this please

Is Cancer giving you a headache – take an Aspirin

- All NSAIDs may reduce cancer risk AND help treat cancer - Related to COX inhibition; story is strongest for Aspirin
- Aspirin well documented – but impact may be primarily for PIK3CA mutations ; not so good for KRAS
 - <http://www.nejm.org/doi/full/10.1056/NEJMoa1207756#t=article>
 - <https://www.ncbi.nlm.nih.gov/pubmed/26712086>
 - <https://www.labroots.com/trending/cancer/5273/mechanism-aspirin-fights-cancer>
 - **Might fight metastasis** <https://www.scientificamerican.com/article/aspirin-may-prevent-cancer-from-spreading-new-research-shows/>
 - <http://ecancer.org/news/11807-nsaids-may-improve-survival-for-certain-colorectal-cancer-patients.php>
 - But: <http://www.enca.com/life/good-and-bad-news-on-aspirin-and-colon-cancer-study>
- Celecoxib? Not so much http://www.medscape.com/viewarticle/588174_6 <http://cancerres.aacrjournals.org/content/65/17/8022>
<https://www.ncbi.nlm.nih.gov/m/pubmed/21401528/> <https://www.ncbi.nlm.nih.gov/m/pubmed/16548099/>
- Sulindac : Mixed messages <http://www.unisci.com/stories/20022/0405025.htm>
<https://www.cancer.gov/types/colorectal/research/eflornithine-sulindac> Sulindac could be carcinogenic
<http://www.medicalnewsbulletin.com/celecoxib-sulindac-drugs-reduce-recurring-colon-cancer-risk/>
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005804>
- But Celecoxib & Sulindac have significant side effects <http://www.pharmaceutical-journal.com/news-and-analysis/research-briefing/non-aspirin-nsaids-outperform-aspirin-for-colorectal-cancer-prevention/20202251.article>
- Stick to **Aspirin** – benefits to heart + maybe cancer if PIK3CA mutant <http://m.nasdaq.com/article/plx-pharma-gets-19-mln-nih-grant-supporting-its-aspirin-development-for-colorectal-cancer-prevention-cm787010>
- Is Aspirin Good? Yes: <https://www.labroots.com/trending/drug-discovery/14010/apsirin-prevents-colorectal-cancer> No:
<https://www.medscape.com/viewarticle/908161> Who the Hell knows!!

Whatever's good for Diabetes is Good for Cancer

- Exercise, Lower weight, low glucose diets... AND...
- **Metformin**
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896365/>
 - https://www.eurekalert.org/pub_releases/2015-03/cwru-mav032315.php
 - <https://www.mdanderson.org/publications/oncolog/november-december-2014/beyond-diabetes-metformin-may-have-broad-utility-in-cancer.html>
 - http://journal.waocp.org/article_31701_d06067188c031710b2c3f816941abf01.pdf
 - <https://academic.oup.com/annonc/article/27/12/2184/2736338/Metformin-as-an-adjuvant-treatment-for-cancer-a>
 - <https://integrativeoncology-essentials.com/2013/02/metformin-supplementation-and-cancer-treatment-more-highlights-from-naturopathic-cancer-conference-oncanp/>
<https://link.springer.com/article/10.1007%2Fs00384-017-2782-z>
- Take this. If you can't get a prescription, take Berberine – herbal / available, with similar effect
- Metformin with blood pressure medicine combo very effective?
<https://www.lbctvgroup.com/news/d/health/416834/Lebanon-news-lbci/ar>
<https://www.sciencedaily.com/releases/2018/12/181211113024.htm>
<https://www.sciencedaily.com/releases/2016/12/161227083500.htm>

What's good for Cholesterol is good for Cancer?

- Same theme as diabetes – whatever lowers glycemic index, weight, etc helps cancer fight
- Statins: turns out it is the high cholesterol itself (leading to statin prescription) that lowers cancer risk !!

<https://www.sciencedaily.com/releases/2016/04/160426144737.htm>

<http://www.cancernetwork.com/news/new-study-challenges-statins-colorectal-cancer-link>

- Counter-intuitive, but there it is; on the other hand:
<https://www.labroots.com/trending/cell-and-molecular-biology/8039/link-colon-cancer-cholesterol - huh?>
- Forget Statins

Pin-worm medicine?

- **Mebendazole:**
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4096024/>
 - <https://www.epainassist.com/cancer/mebendazole-a-parasitic-worm-killer-can-treat-colon-cancer>
 - <https://www.askdrmaxwell.com/2015/08/mebendazole-from-antiparasitic-to-cancer-cure/>
- Pre-clinical evidence, plus anecdotal evidence; trials succeeding for brain cancer
- Try it for CRC – no side-effects

Malaria?!!

- **Artemisinin:** better in form of artusenate, artemether, artemisone, DHA; herbal supplements are Artemisinin, Artusenate not available in US
 - <https://cancercompass.com/message-board/message/all,93111,0.htm?mid=674658>
 - Reduces recurrence: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4484515/>
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4389338/> synergy with other drugs, no side effects; take few days on , few days off, to prevent resistance to absorption. Targets tumors rich in Iron.
 - Even helps **Diabetes!** <https://www.sciencedaily.com/releases/2016/12/161201121727.htm>
 - <http://jeffreydachmd.com/2016/02/artemisinin-our-ultimate-cancer-weapon-a-gift-from-china/> <http://www.mwt.net/~drbrewer/canart1.htm>
<https://www.researchgate.net/publication/44619123> In vitro study of the anti-cancer effects of artemisone alone or in combination with other chemotherapeutic agents <http://www.telegraph.co.uk/wellbeing/health-advice/pill-cancer-tumour-bowel-health-drugs-cheap/> <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/artesunate-colorectal-cancer-effective-treatment/article/384143/>
http://www.naturalnews.com/033182_artemisinin_cancer.html
<http://www.mwt.net/~drbrewer/canart2.htm>
<https://www.hindawi.com/journals/bmri/2012/247597/>

Alcoholism?? Anxiety?

- **Deralin (propranolol hydrochloride)** (used to reduce blood pressure and anxiety) and **Etopan (Etodolac)** (used to reduce inflammation) — five days before their surgeries, the day of their surgeries and five days after their surgeries. <http://www.timesofisrael.com/simple-drug-regimen-could-help-prevent-cancer-recurrence-study-says/> <http://www.netdoctor.co.uk/medicines/aches-and-pains/a6238/etopan-xl-etodolac/> <https://www.news-medical.net/drugs/Deralin.aspx> <https://www.sciencedaily.com/releases/2017/08/170807104054.htm>
- **disulfiram (trade name Antabuse)**, fights alcoholism AND cancer!!! <https://www.labroots.com/trending/cancer/7522/drug-fights-alcoholism-cancer>

Decongestant? Heart Disease?

- **N-Acetyl cysteine (NAC)** <https://medicalxpress.com/news/2017-11-decongestant-highly-effective-starving-cancer.html>
- **Warfarin: blood thinners**
<https://www.medicalnewstoday.com/articles/319989.php>
<https://cancercompass.com/cancer-news/article/59933.htm>

Erectile Dysfunction? Viagra? What else?

- <https://www.livescience.com/62110-viagra-cancer-prevention-mice.html>
- <http://www.kvoa.com/story/37771816/viagra-may-suppress-development-of-colon-cancer-study-says>
- Even Eyedrops could help!! <http://mtv.com.lb/News/879973>

Diets – not always the obvious

- Integrated Medicine folks contradict each other often – and discourage supplements with obvious benefits. They seem to be “readers” not thinkers... and not even good at that. Coffee? “No...! Check our Diet site”. Diet site: “NEW!!! – Coffee helps fight cancer!”; <https://www.forbes.com/sites/alicegwalton/2018/02/01/coffee-shops-in-california-may-soon-post-cancer-warnings-is-there-good-science-here/#3092f0a35ed0> <http://6abc.com/coffee-could-help-prevent-colon-cancer-researchers-say/3337586/> Fruits & Vegetables? Not bad for you ... <http://patrickquillin.com/gettinghealthier/wp-content/uploads/2015/12/Foods%20that%20Fight%20Cancer.pdf>

BUT... benefit is really in **dry beans!** <http://m.jn.nutrition.org/content/136/7/1896.full>

- Fiber? No difference ?
 - http://www.cochrane.org/CD003430/COLOCA_does-dietary-fibre-prevent-recurrence-colorectal-adenomas-and-carcinomas
 - <http://www.mdedge.com/jfponline/article/60181/oncology/does-high-fiber-diet-prevent-colon-cancer-risk-patients>
<http://onlinelibrary.wiley.com/doi/10.1002/ijc.21115/full>
 - <http://cancercompass.com/cancer-news/article/59892.htm>
- Folic Acid? No difference <http://www.nature.com/articles/srep12044>
- <http://www.healwithfood.org/colorectalcancer/foods.php> <http://www.aicr.org/foods-that-fight-cancer/>
<http://www.ihavelynchsyndrome.org/10-foods-can-reduce-risk-colon-cancer/#.WK4yGHkzXIU>
- Key ingredient: complete focus on cancer fighting foods, not just good nutrition. Everything you eat and drink should be fighting cancer!
- Hispanics live twice as long with cancer! Their diet may be key
<https://coloncancernewstoday.com/2017/04/04/hispanic-colorectal-cancer-patients-survive-longer-blacks-whites-quality-life/>

Diets (2)

- **Coffee** 3-4 cups a day is good <http://www.nmbreakthroughs.org/medical-advances/coffee-and-colon-cancer>
- Can't miss: soak heavily Blue & Green Juices
 - **Beet Juice**, <https://dailyhealthpost.com/beets-help-against-cancer/>
 - **Pomegranate**, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2989797/#!po=0.704225>
<https://www.sharecare.com/health/juices-health-nutrition/article/colon-health-benefits-of-pomegranate-juice>
<https://pdfs.semanticscholar.org/b99c/335a227e45dab311527b460a694c1b55b658.pdf>
 - **Citrus Juices**, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4000498/#!po=0.531915>
 - **Cranberry**, <http://www.dailymail.co.uk/health/article-3202942/Cranberries-help-fight-bowel-cancer-Chemicals-fruit-reduce-size-tumours.html> <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/cranberry>
 - **Blueberries** <http://abcnews.go.com/Health/Healthday/story?id=4506346&page=1>
 - **Green Tea** : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3142888/> better for women?
Matcha! <http://www.express.co.uk/life-style/health/857569/cancer-risk-symptoms-matcha>
 - **White Tea**: even better than Green! <http://www.webmd.com/colorectal-cancer/news/20030311/green-tea-white-tea-fight-colon-cancer>
<https://www.sciencedaily.com/releases/2000/04/000410084553.htm>

Diets (3)

- **Garlic, Pepper, Ginger, Broccoli** are great <http://www.dailymail.co.uk/health/article-120682/Broccoli-cancer-away.html> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3603442/> <http://www.livestrong.com/article/387992-garlic-as-cancer-treatment/> <https://dailyhealthpost.com/ginger-destroys-cancer/> <http://gettinghealthier.com/how-fresh-ginger-defeats-cancer-cells/>
- **Asparagus, Spinach, Celery** are great; Celery juice helps neuropathy -
<http://www.livestrong.com/article/549967-celery-juice-and-neuritis/> <https://healthesolutions.com/spinach-influences-gene-expression-to-cut-colon-cancer-risk-in-half/>
<http://oregonstate.edu/ua/ncs/archives/2012/jun/study-links-carcinogens-cancer-stem-cells-%E2%80%93-spinach-can-help> <http://www.ergo-log.com/bowel-cancer-less-likely-to-develop-in-asparagus-lovers.html>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3775565/>
- **Purple foods (potatoes, carrots)** a great help
<http://news.psu.edu/story/367072/2015/08/26/research/colorful-potatoes-may-pack-powerful-cancer-prevention-punch> <http://www.telegraph.co.uk/news/uknews/1560769/Dark-fruit-and-veg-may-fight-colon-cancer-cells.html> <https://www.theguardian.com/science/2007/aug/20/science-news.cancer>
- **Fish** (twice a week minimum), like many 4-letter foods (Kale, Beet) are good
<http://www.webmd.com/colorectal-cancer/news/20160720/fish-oil-may-reduce-colon-cancer-deaths#1>
<http://www.webmd.com/colorectal-cancer/news/20140603/fish-exercise-may-help-thwart-colon-cancers-return-study#1>

Diet (4)

- **Walnuts, peanuts** are good <http://www.medicalnewstoday.com/articles/311311.php>
<http://www.dailymail.co.uk/health/article-3079949/A-daily-handful-WALNUTS-slow-growth-bowel-cancer-reducing-blood-supply-tumours.html> <http://www.express.co.uk/life-style/health/676508/Eating-a-handful-of-walnuts-could-protect-against-bowel-cancer> <http://www.livescience.com/54448-eating-nuts-may-lower-colon-cancer-risk.html>
- No Sugar – use **Stevia** instead <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/stevia>
https://www.mdanderson.org/publications/cancerwise/2017/04/sugar-and-cancer-treatment--4-things-patients-should-know-.html?cmpid=cw_fb_diet_support Warburg effect: <http://www.cancertherapyadvisor.com/general-oncology/warburg-effect-sugar-intake-cancer-prevention-treatment/article/711447/>; maybe?
<https://www.mskcc.org/blog/no-sugar-no-cancer-look-evidence>
- **Dry Beans: lentil, navy beans**, etc ...
<https://coloncancerfoundation.org/prevention/expertOpinionsArticles/drFuhrman20131205.html>
<https://www.mdanderson.org/publications/oncolog/may-june-2018/diet-may-improve-gut-microbiome-in-colorectal-cancer-survivors.html>
- **Flax Seeds:** <http://umm.edu/health/medical/altmed/herb/flaxseed>
- **Whole wheat/grain products:**
<https://coloncancerfoundation.org/prevention/expertOpinionsArticles/drFuhrman20111129.html>
<http://www.aicr.org/foods-that-fight-cancer/whole-grains.html> <https://cancercompass.com/cancer-news/article/59295.htm>
- **Papaya: Leaf extracts (not the fruit!)** <http://www.cancerdefeated.com/newsletters/Fruit-of-the-Angels-Stops-Cancer-in-Its-Tracks.html> <http://www.telegraph.co.uk/foodanddrink/foodanddrinknews/7414067/Papaya-helps-fight-cancer-find-scientists.html>
- **Long Pepper (Indian):** <http://www.utsouthwestern.edu/newsroom/news-releases/year-2017/jan/anticancer-plant-westover.html>
- **Anything with low glycemic index load – (healthy) weight loss helps fight cancer.**

Diet (5)

- **Whey Proteins:** good stuff (includes CLA) <http://www.drdavidwilliams.com/benefits-of-whey-protein/>
- **Potato Juice:** healthy and helpful for cancer; especially **red and purple**; and **Sweet Potatoes**
<http://www.thehealthyarchive.info/2014/10/potato-juice-cure-for-some-of-most.html?m=0>
<http://nutritionfacts.org/2015/11/19/sweet-potato-proteins-vs-cancer/>
http://www.webmd.com/diet/ss/slideshow-sweet-potatoes?ecd=wnl_spr_033017&ctr=wnl-spr-033017_nsl-dstry_1&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d
- **Peanuts & Peanut Oil:** Mixed story, (watch those lectins!) be careful not too much (15gm/day); do not boil oil! Frying is also no good for all oils!
<http://www.stopcancerfund.org/p-breast-cancer/can-a-handful-of-nuts-a-day-keep-cancer-away/> <http://www.medicalnewstoday.com/articles/295124.php>
<http://www.peanut-institute.org/health-and-nutrition/disease-prevention/other-diseases.asp>
<http://www.peanut-institute.org/health-and-nutrition/disease-prevention/other-diseases.asp>
<http://www.marksdailyapple.com/how-bad-is-peanut-butter-really/>
<http://www.telegraph.co.uk/news/health/news/11981884/Cooking-with-vegetable-oils-releases-toxic-cancer-causing-chemicals-say-experts.html>
<http://www.telegraph.co.uk/news/health/news/11981884/Cooking-with-vegetable-oils-releases-toxic-cancer-causing-chemicals-say-experts.html>
- **Olive Oil:** good for Colon, not Rectal?!! <https://academic.oup.com/annonc/article/18/1/36/282164/Fried-foods-olive-oil-and-colorectal-cancer>
- **Canola Oil:** good <https://www.ncbi.nlm.nih.gov/m/pubmed/21264790/> **Coconut Oil:** good
<http://www.collective-evolution.com/2016/05/20/look-what-coconut-oil-did-to-colon-cancer-cells-in-just-two-days/> <http://theheartsoul.com/coconut-oil-kills-colon-cancer/?t=HHL>

Diet (6)

- **Chocholate**: yes, but Sugar no! Cocoa is the key – dark chocholates
<http://www.care2.com/greenliving/good-news-for-chocolate-lovers-cocoa-fights-colon-cancer.html> <http://www.cancerdefeated.com/newsletters/Chocolate-is-a-Powerful-Health-Food-But-Heed-This-Warning.html>
- **Cinnamon**: <https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-10-392>
- **Quinoa**: maybe <http://samfgrant.com/2013/01/25/think-quinoa-is-good-for-you-think-again/> <http://www.sheltonherald.com/12315/try-quinoa-one-of-five-suggested-cancer-fighting-foods/>
- **Taro Root (Qelqas – Elephant Ears ☺): poi (Colocasia esculenta)**
<http://www.thehealthsite.com/diseases-conditions/health-benefits-of-arbi-colocasia-taro-root-bs915/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3769987/>
- **No Red Meat**: <http://www.wcrf.org/int/blog/articles/2015/10/red-meat-and-bowel-cancer-risk-how-strong-evidence>
- **Dairy**'s good, Cheese – maybe... <https://www.ncbi.nlm.nih.gov/m/pubmed/21617020/> <https://academic.oup.com/jnci/article/96/13/1015/2520826/Dairy-Foods-Calcium-and-Colorectal-Cancer-A-Pooled> <http://m.ajcn.nutrition.org/content/83/3/527.full>

Diet (7)

- **Spermidine** rich foods - like **aged cheese, mushrooms, soy products, legumes, corn and whole grains** – prevents cancer and extends life span!
<http://www.news-medical.net/news/20170420/Spermidine-supplement-may-prolong-lifespan-prevent-liver-fibrosis-and-cancer.aspx>
<https://www.sciencedaily.com/releases/2017/04/170421091816.htm>
- **Spices**: <http://www.mensfitness.com/nutrition/what-to-eat/liberally-dust-your-food-spices-grilling-keep-cancer-away>
- No Processed Foods: <http://www.dailymail.co.uk/health/article-3289821/Bacon-burgers-sausages-big-cancer-threat-cigarettes-global-health-chiefs-declare.html>
- **Almonds**: <http://www.express.co.uk/life-style/health/806178/colon-cancer-chemotherapy-cure-treatment-nuts-cashew-almonds>
<http://www.ndtv.com/india-news/eating-nuts-can-prevent-colon-cancer-recurrence-claims-study-1695094?site=full>
- **Red Onions**: <https://vitalupdates.com/red-onions-used-prevent-cancer/>

Diet (8)

- Hot Chili Peppers: <http://food.ndtv.com/health/scientists-discover-designer-virus-that-can-help-kill-cancer-1704530?desktop=true> is this why Hispanics live twice as long with cancer??
<http://newsroom.wiley.com/press-release/medicine-and-health/hispanic-lung-cancer-patients-tend-live-longer-blacks-and-whites>
- Saffron: <https://geneticliteracyproject.org/2017/07/27/saffron-cancer-fighting-super-food/>
- Sambar: <http://www.deccanchronicle.com/decaf/130817/food-cure-how-sambar-can-prevent-colon-cancer.html>
- **Go NUTS:** <https://cancercompass.com/cancer-news/article/58290.htm>
- Aronia Berries: <https://www.labroots.com/trending/cancer/7891/aronia-berries-anti-cancer-benefits>
- No processed food: <https://www.vox.com/science-and-health/2018/1/18/16902784/cancer-diet-inflammation-colorectal>
- **Miracle Cure: Broccoli & Yogurt** - <https://www.labroots.com/trending/cancer/7842/scientific-recipe-suppresses-95-percent-colorectal-cancer-cells>
<http://www.bodyandsoul.com.au/health/health-news/new-study-claims-eating-broccoli-yoghurt-could-prevent-bowel-cancer/news-story/882a77fbec00c0b1075e97e48985f01d>

How about NO DIET??

- **Fasting** is a possible anti-cancer tool https://examine.com/nutrition/the-low-down-on-intermittent-fasting/?utm_source=newletter&utm_medium=insiders&utm_campaign=blog-040617 <http://www.medicalnewstoday.com/articles/241518.php> <http://www.arizonaadvancedmedicine.com/Articles/2013/June/Fasting-caloric-restriction-for-treatment-of-can.aspx> <https://coloncancernewstoday.com/2015/04/07/fasting-combined-with-less-toxic-drugs-effective-alternative-to-chemotherapy/> <http://www.hope4cancer.com/information/healing-cancer-on-time-how-intermittent-fasting-may-help.html>
- Working on **FDA** approval!
<http://fitness.mercola.com/sites/fitness/archive/2015/07/03/intermittent-fasting-cancer-treatment.aspx>

Diet - References

- <http://sarahcannon.com/for-patients/learn-about-cancer/colorectal-cancer/nutrition.dot>
- <http://kimberlysnyder.com/blog/2013/09/25/10-proven-cancer-fighting-foods/>
- <http://www.livestrong.com/article/436188-diet-plan-for-someone-with-colon-cancer/>
- <http://blog.dana-farber.org/insight/2016/03/what-can-i-eat-if-i-have-colorectal-cancer/>
- <http://www.gastroendonews.com/Retroflexions/Article/03-17/Healthy-eating-to-prevent-colon-cancer/40722>
- <https://nutritionfacts.org/2015/12/22/which-nut-suppresses-cancer-cell-growth-the-most/>
- <http://www.cheatsheet.com/culture/reduce-cancer-risk-eating-foods.html/?a%3Dviewall>
- <https://www.healthguide.com/health/10-powerful-cancer-fighting-herbs-2/>
- <https://www.ndtv.com/food/new-findings-may-improve-chemotherapy-5-anti-cancer-foods-to-know-1777088>

Diet – Reference (2)

- <http://blog.dana-farber.org/insight/2015/04/the-best-foods-and-diet-for-cancer-treatment-and-survivorship/>
- https://www.webmd.com/cancer/ss/slideshow-cancer-fighting-foods?ecd=wnl_can_120517&ctr=wnl-can-120517_nsl-promo-v_5&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d

Our own Diet to Complete Response

- **Purple Potatoes** (6 small a day)
- **Beans: Dry beans (Navy, Peas, pinto, lentils)**
- **Whole wheat** everything (bread, spaghetti, ravioli, snacks, chips); Rice
- **Turmeric, garlic and pepper** in all meals
- **Wheatgerm:** in **Kishk** (fermented WG); in **Tabbouleh** (salad)
- **No Red Meat – Lean Chicken, Turkey** (in many dishes); **Fish** (at least twice a week)
<https://www.dietdoctor.com/why-meat-eaters-get-colorectal-cancer-more-often>
- **Herbs:** Parsley, Thyme,
- **Veggies:** Tomatoes, Green salads, Spinach, Asparagus, Cauliflower, Brussel Sprouts
- **Juices:** Pommegranate, Carrot, Beet, Citrus, mixed **Green** and **Purple** power juices (berries, Kale, Celery, etc), Soursop (Diet), **Green Tea**, **White Tea**.
- **Fruits:** Oranges (Citrus), Apples (with skin), Papaya, Guanabana, Bananas

Supplements

- Don't ask an integrated Medicine person or an oncologist. Just record: "there is no definite proof; and it MIGHT interfere with chemotherapy", and play it whenever you get the urge to ask.
- What works *in vivo* and *in vitro* may not work in humans. Bioavailability is the key (affected by absorption and metabolism in the body); when multiple products are available, check for bioavailability profile
- Guiding principle: Natural, doesn't hurt, might help – Why not?? Another guiding principle: check the web for side effects and interactions, just in case!
- Not to overdose- where studies show no impact, don't use...

Supplements (1)

- **Vitamin D (Cholecalciferol) & Calcium** : despite some contrary evidence, questionable:
<https://consumer.healthday.com/cancer-information-5/colon-cancer-news-96/vitamin-d-calcium-may-not-prevent-colon-cancer-after-all-704235.html>. But since most CRC patients are vitamin D deficient, taking vitamin D3 is a good idea. There's something there
<https://twitter.com/MedscapeOnc/status/872592506667585536?t=1&cn=ZmxleGlibGVfcMVjc18y&refsrc=email&iid=00018a0747c8418d898fc886517990d7&uid=54455276&nid=244+276893697> . **The Oncs think it and Aspirin are the only sure things** ☺ http://www.omaha.com/livewellnebraska/health/vitamin-d-to-ward-off-cancer-more-study-is-needed/article_a39d3fb3-060c-5517-9bd5-c265a41dd245.html
<http://www.dailymail.co.uk/health/article-4356948/Vitamin-D-supplements-NOT-reduce-risk-cancer.html>
<http://www.dana-farber.org/Newsroom/News-Releases/new-study-shows-high-vitamin-D-levels-increases-survival-of-patients-with-metastatic-colorectal-cancer.aspx>
<https://www.theguardian.com/science/2018/mar/07/vitamin-d-may-offer-protection-against-cancers-study-says?prclt=btnagm3N>
- Selenium? Maybe, mixed results. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2743456/>
- vitamin C (ascorbic acid), vitamin E (tocopherols), and beta-carotene – no major impact? **Large Vitamin C infusions (not tablets) in Montreal Trial helped KRAS CRC. Also Vitamin C & Antibiotics have a powerful effect.** <https://www.cancer.gov/about-cancer/treatment/cam/patient/vitamin-c-pdq>
<http://news.cornell.edu/stories/2015/11/vitamin-c-halts-aggressive-colorectal-cancer-study>
<https://www.ncbi.nlm.nih.gov/pubmed/11205484> <https://www.ncbi.nlm.nih.gov/pubmed/26541605>
<http://www.dailystar.co.uk/health/599440/Natural-cancer-treatment-vitamin-C-cure>
https://www.healthyhabitsliving.com/blogs/be-healthy/the-super-powered-vitamin?utm_source=Healthy+Habits+Living+Newsletter&utm_campaign=e4213e313e-EMAIL CAMPAIGN 2017 04 06&utm_medium=email&utm_term=0_a50b90f300-e4213e313e-120253861&mc_cid=e4213e313e&mc_eid=5bc62e7508 <https://www.labroots.com/trending/cancer/6227/vitamin-antibiotics-potent-duo-cancer>

Supplements (2)

- **Termuric (Curcumin): Yes!**
 - https://www.eurekalert.org/pub_releases/2015-03/cwru-mav032315.php
 - <http://www.cancerresearchuk.org/about-cancer/cancers-in-general/cancer-questions/can-turmeric-prevent-bowel-cancer>
<http://www.lifeextension.com/newsletter/2014/1/curcumin-sensitizes-colon-cancer-cells-to-chemotherapy/page-01>
<http://nutritionfacts.org/2015/10/22/preventing-and-treating-colon-cancer-with-turmeric-curcumin/>
- **Alpha Carotene** <http://www.canceractive.com/cancer-active-page-link.aspx?n=535> (also Chlorella) get **from Diet** <http://www.naturalhealth365.com/beta-carotene.html/>
- **Vitamin A**: helpful (with vitamin C best) – get **from Diet**
<http://articles.mercola.com/sites/articles/archive/2016/09/12/vitamin-a-colon-cancer-prevention.aspx>
- **Omega-3**: like Fish, good <http://www.webmd.com/colorectal-cancer/news/20160720/fish-oil-may-reduce-colon-cancer-deaths#1>
<https://www.researchgate.net/publication/287996149> Fish oil supplementation during chemotherapy increases posterior time to tumor progression in colorectal cancer
<https://www.sciencedaily.com/releases/2018/01/180126130332.htm>
- **Modified Citrus Pectin** – Yes! <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2782490/>
- Fermented Wheat Germ extract: helps, expensive; trials not reliable (one Hungarian group selling it!)? Is it just expensive “**kishk**” (**Lebanese specialty**)? <http://www.cam-cancer.org/The-Summaries/Dietary-approaches/Fermented-wheat-germ-extract/>; skip it- just eat Kishk
- Low Dose Naltrexone (LDN) – mixed reviews ... skip it <https://www.ncbi.nlm.nih.gov/m/pubmed/8620464/>
<https://sciencebasedmedicine.org/low-dose-naltrexone-bogus-or-cutting-edge-science/>

Supplements (3)

- **Cannabis** – good, hard to get, (illegal!) <https://www.merryjane.com/health/gw-pharmaceuticals-is-proving-cannabis-helps-cure-cancer>
- **Bee Pollen, Royal Jelly and Propolis plus Honey (Manuka)**– good and delicious!
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3985046/>
<http://www.cancerdefeated.com/scientists-think-this-sticky-elixir-can-kill-cancer-cells-without-killing-you/2868/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3865795/>
<https://nz.steenshoney.com/blog/uae-university-breakthrough-manuka-honey-cancer-treatment>
- **Turkey Tail Mushrooms (Coriolus Versicolor)**: excellent – even MSKCC supports it!!
<https://www.mskcc.org/cancer-care/integrative-medicine/herbs/coriolus-versicolor>
- **Shiitake Mushroom**: part of several mushroom families that help – Maitake & Reishi also help – just take one kind <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/shiitake-mushroom> <https://www.ncbi.nlm.nih.gov/pubmed/12470439>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3339609/> <http://trulyheal.com/mushrooms-immune-boosters-disease-fighters/>
- **Dandelion Root**: extract or just tea – a little known secret weapon
<http://www.impactjournals.com/oncotarget/index.php?journal=oncotarget&page=article&op=view&path%5B%5D=11485> <http://www.uwindsor.ca/dandelionrootproject/>
<http://dailynativenews.site/2018/03/herb-that-is-100-times-stronger-than-chemo-drugs-and-kills-cancer-in-2-days>

Supplements (4)

- **DanShen**: prevents metastasis and proliferation - **anti-CD36, which is the primary cause of metastasis**
<https://ncifrederick.cancer.gov/about/theposter/content/natural-product-shows-effectiveness-combating-colorectal-cancer> <https://www.sciencedaily.com/releases/2016/12/161207132117.htm>
- **Grapeseed extract**: great for stage 4, but may be counteracted by antioxidants??
<http://www.medicalnewstoday.com/articles/255182.php> <http://www.naturalhealth365.com/cancer-cells-colorectal-cancer-1459.html> <http://www.news-medical.net/news/20170619/Grape-based-compounds-could-pave-way-for-new-treatments-to-prevent-colon-cancer.aspx> <https://www.oliveoiltimes.com/olive-oil-health-news/grape-extracts-wine-can-help-fight-colon-cancer-research-suggests/57959>
- **ECGC**: cant miss- the heart of Green Tea <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3509513/>
- **Boswellia**: how can you miss with Frankincense! Better in combination with Turmeric. BCM-95 is a good extract. http://www.nutraceuticalsworld.com/contents/view_online-exclusives/2011-06-09/boswellia-shown-to-aid-colorectal-cancer-fight <http://www.newsmax.com/Health/Headline/turmeric-frankincense-colon-cancer/2015/05/20/id/645858/>
- **Graviola**: soursop tastes great and helps – can drink the juice, eat the fruit, or buy an extract. But some side effects (neural damage, etc) make it not a sure thing: <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/graviola> <http://www.cancercenter.com/discussions/blog/experts-caution-against-soursop/>
- **Resveratrol**: the good stuff in wine and grapes. Especially better with Curcumin; but may hurt oxaliplatin?
<https://www.ncbi.nlm.nih.gov/pubmed/19838927>
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078700>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3994604/>
http://m.fasebj.org/content/30/1_Supplement/1090.11

Supplements (5)

- **Milk Thistle:** (Silymarin) also good with Turmeric (getting a pattern yet?) -
<http://hsionline.com/2016/09/06/turmeric-and-milk-thistle-found-to-be-potent-colon-cancer-fighters/> <http://www.coloradocancerblogs.org/oral-milk-thistle-extract-stops-colorectal-cancer-stem-cells-from-growing-tumors/>
- **Ginkgo Biloba:** fights cancer (maybe), but use mainly for neuropathy from chemo!
<https://www.ncbi.nlm.nih.gov/pubmed/21471711>
<https://www.hindawi.com/journals/ecam/2013/423713/>
<http://ascopubs.org/doi/abs/10.1200/JCO.2004.22.90140.3670>
- **Berberine:** like Metformin, very effective (with turmeric synergy!).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4425560/>
<https://news.vanderbilt.edu/2013/03/29/berberine-stops-colon-cancer/>
<https://integrativeoncology-essentials.com/2013/02/an-over-the-counter-ancient-medicinal-berberine-fights-cancer-and-diabetes/> <http://www.nature.com/articles/srep26064>
- **Myrrh & Mastic Gum:** good effect implied, not proven. <http://www.nydailynews.com/lifestyle/health/jesus-miracle-myrrh-cure-cancer-article-1.2896616>
<http://iv.iiarjournals.org/content/23/1/63.full>

Supplements (6)

- **Alpha Lipoic Acid:** likely effect <https://www.ncbi.nlm.nih.gov/pubmed/15843897>
<https://www.karger.com/Article/FullText/443994>
- **Glucosamine:** 45% reduction in risk! <http://www.nutraingredients.com/Research/Joint-health-supplements-touted-as-colorectal-cancer-preventers>
- **Vitamin B- Complex:** be careful out there! U shaped response -
<https://www.ncbi.nlm.nih.gov/pubmed/23859033>
- **DCA:** (Mito-DCA formulation) possible effect, needs other supplements, no-resveratrol, etc.; like Alpha-lipoic acid ; helps Avastin! <http://www.cancertreatmentsresearch.com/?p=1007>
<https://www.ncbi.nlm.nih.gov/m/pubmed/23361368/>
<https://www.cancerquest.org/patients/integrative-oncology/dichloroacetate-dca>
- **Procaine:** possible effect (demethylation DNA)
<http://cancerres.aacrjournals.org/content/63/16/4984>
- **Chinese Herbal PHY906:** reduces effects of chemo and radiation
<http://www.nature.com/articles/srep09384>
- **Collect** (Israeli product) is curcumin, green tea, and selenomethionine
<https://www.ncbi.nlm.nih.gov/pubmed/21180609>

Supplements (7)

- **Lesser Galangol** – use powder in food <https://www.ncbi.nlm.nih.gov/pubmed/23925650>
- **Quercetin:** good stuff <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378141/>
<http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-03>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4368034/>
<https://www.hindawi.com/journals/ecam/2011/591356/>
http://www.meschinohealth.com/ArticleDirectory/Quercetin_Reduce_Risk_Of_Colon_Cancer
<http://umm.edu/health/medical/altmed/supplement/quercetin>
- **PSK:** great stuff, hard to get in US- but **Turkey Tail** is same!
<http://ww5.komen.org/BreastCancer/PolysaccharideKPSK.html>
<https://www.ncbi.nlm.nih.gov/pubmed/12168863>
- **Astragalus** (Milk Vetch) good (helps radiation effects) <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/astragalus> <https://academic.oup.com/carcin/article/28/6/1347/2476243/Astragalus-saponins-induce-growth-inhibition-and>
- **Sutherlandia Frutescens** (South African):
<http://www.sciencedirect.com/science/article/pii/S0254629915002938>
- **Rooibos (South African):** <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/rooibos-tea>
<http://www.cansa.org.za/rooibos-tea-as-an-anti-carcinogen-project/>

Supplements (8)

- **Sun Farms Vegetable soup**: even MSKCC likes it, but hard to find (and beaucoup \$\$s)
<https://www.mskcc.org/cancer-care/integrative-medicine/herbs/sun-farms-vegetable-soup>
- **Vitamin K2**: should help, but some conflicting data <https://www.ncbi.nlm.nih.gov/pubmed/19424596>
<http://www.reuters.com/article/us-vitamin-k-idUSTRE62U4VO20100331>
- **Escozine (Scorpion Venom!)**: (Cuba) <http://www.miaminewtimes.com/news/blue-scorpion-venom-cubas-miracle-drug-6391741> <http://abc6onyourside.com/news/nation-world/lighting-up-cancer-doctor-using-scorpion-venom-as-cancer-treatment>
- **PNC -27**: works?, but FDA does not recommend <https://thetruthaboutcancer.com/pnc27-promising-cancer-cure/>
- **Glutathione**: fights neuropathy (which helps tolerate chemo, which allows more chemo, which helps the fight); may fight cancer (dose dependent) <http://www.zangcenter.com/types-of-cancer/colon-cancer/recurrent-colon-cancer/> <https://www.hindawi.com/journals/omcl/2013/972913/>
- **COQ-10**: helps <https://thetruthaboutcancer.com/coq10-cancer/>
- **Echinacea**: helps <https://www.ncbi.nlm.nih.gov/pubmed/22971663> <http://www.ergo-log.com/echinacea-kills-colon-cancer-cells.html>
- **Colloidal Silver**: helps <http://www.dailymail.co.uk/health/article-2095610/Silver-bullet-cancer-Metal-kill-tumours-better-chemotherapy-fewer-effects.html>
- **Slippery Elm**: for anti-inflammation of colon

Supplements (9)

- **Manuka Honey**: delicious, one spoon a day
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3865795/>
- **Pau D'Arco** – Taheebo tea – Lapacho:
https://www.jstage.jst.go.jp/article/jcam/8/2/8_2_119/_article
- **Vitamin B3**: helps neuropathy (CIPN) https://www.eurekalert.org/pub_releases/2017-02/uoih-nr022317.php
- **Spider lily plant** (galantamine – pancratistatin **CAS 96281-31-1**): great effect (good for nerves & dreams as well!) <http://www.thedenverchannel.com/lifestyle/health/a-stellar-cancer-killer-u-of-w-researchers-identify-new-cancer-treatment-method>
- **MET Methanol Extract of Triphala**: kills cancer stem cells
<https://www.hindawi.com/journals/bmri/2015/649263/> <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/triphala>
- **Aloe Vera**: mixed reviews, do not use. May help with some side effects of radiation.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3537128/>
<http://www.cancerresearchuk.org/about-cancer/cancers-in-general/treatment/complementary-alternative/therapies/aloe-vera>

Supplements (10)

- **Bromelain (Pineapple juice!):** great (comes with Quercetin usually)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3633552/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4245783/>
<http://umm.edu/health/medical/altmed/supplement/bromelain>
- **N-acetyl-cysteine (NAC):** nope ; might help neuropathy though.
<http://www.denvernauropathic.com/NAC2011.htm>
https://www.researchgate.net/publication/7324107_N-acetylcysteine_has_neuroprotective_effects_against_oxaliplatin-based_adjuvant_chemotherapy_in_colon_cancer_patients_Preliminary_data
- **Conjugated Linoleic Acid (CLA):** good (in **Grass fed Beef!**); also in **Whey Proteins**
[http://www.jnutbio.com/article/S0955-2863\(07\)00007-1/abstract?cc=y=](http://www.jnutbio.com/article/S0955-2863(07)00007-1/abstract?cc=y=)
<https://www.mskcc.org/cancer-care/integrative-medicine/herbs/conjugated-linoleic-acid>
- **Perillyl Alcohol:** nope. <https://www.ncbi.nlm.nih.gov/m/pubmed/12794248/>
- **Essiac Tea:** maybe? <https://thetruthaboutcancer.com/essiac-tea-cancer-fighting/>
- **Shark Cartilage!** ☺ nope. <https://www.cancerquest.org/node/4039>

Supplements (11)

Supplements (12)

- Lycopene (the color in **Tomatoes** & vegetables!) good for right colon?? Tomatoes are good
<http://www.tandfonline.com/doi/abs/10.1080/01635581.2016.1206579?src=recsys&journalCode=hnuc20> <https://academic.oup.com/jnci/article/91/4/317/2543924/Tomatoes-Tomato-Based-Products-Lycopene-and-Cancer>
http://www.naturalnews.com/023959_cancer_lycopene_antioxidant.html
<https://www.ncbi.nlm.nih.gov/pubmed/18537129>
- PEITC in plants targets cancer stem cells: <http://www.nature.com/articles/srep40569>
- Inositol IP6 (+hexaphosphate): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4396237/>
- **Betulinic Acid (Apple skins):** great stuff- kills Cancer Stem Cells - get from **Chaga** Supplement; some doubt about effect on colon (RAID study)
<https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-11-371>
<https://www.ncbi.nlm.nih.gov/pubmed/26647913>
<https://www.ncbi.nlm.nih.gov/pubmed/17845510> <http://www.eurekaselect.com/137539/article>
<https://www.hindawi.com/journals/ecam/2017/5180707/ref/>
<http://onlinelibrary.wiley.com/doi/10.1111/j.1742-7843.2007.00115.x/abstract>
<http://mycotherapyonline.com/carous/chaga/>
- FlaxSeed Oil: good <https://www.ncbi.nlm.nih.gov/pubmed/15749630>

Supplements (13)

- Mistletoe extract: (Iscador) kills stem cells!
<http://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-9-451>
<http://www.greenmedinfo.com/blog/mistletoe-extract-beats-chemotherapy-against-colon-cancer-cells> <http://www.oncologynurseadvisor.com/issues-in-cancer-survivorship/mistletoe-the-holiday-plant-is-making-headlines-as-an-alternative-cancer-treatment/article/391492/>
<http://hub.jhu.edu/magazine/2014/spring/mistletoe-therapy-cancer/>
<https://www.cancer.gov/about-cancer/treatment/cam/hp/mistletoe-pdq>
- **Probiotics**: great to help stomach deal with chemo
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3499195/>
<https://www.labroots.com/trending/cancer/6942/leveraging-probiotics-fight-colorectal-cancer>
- **A good daily multivitamin and multi mineral** is always a good idea, to make sure you are not deficient in normally needed support, regardless of cancer. It can only help.

Supplements (14)

- **Sanguisorba officinalis L** <http://www.nature.com/articles/srep34245>
- **Panaxadiol** (Ginseng extract)
<https://www.ncbi.nlm.nih.gov/m/pubmed/19277659/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3416950/>
- ***Oplopanax horridus*** <http://ar.iiarjournals.org/content/30/2/295.full>
- **Piceatannol** (like Resveratrol) – questionable?
<https://www.omicsonline.org/open-access/therapeutic-role-of-resveratrol-and-piceatannol-in-disease-prevention-2155-9864.1000240.php?aid=34312>
<https://www.ncbi.nlm.nih.gov/m/pubmed/22108298/>
- **Lignans (Flaxseed – Wheat Bran)** <http://silverbulletin.utopiasilver.com/flax-hull-lignans-may-be-the-most-promising-anti-cancer-breakthrough/>
<http://m.jn.nutrition.org/content/135/3/598.full>

Supplements (15)

- **Ferulic Acid (Cereals)** <https://www.omicsonline.org/open-access/anticancer-properties-of-phenolic-acids-in-colon-cancer--a-review-2155-9600-1000468.php?aid=70532>
<https://cmjournal.biomedcentral.com/articles/10.1186/s13020-016-0116-7>
- **Gallic Acid (Walnuts, Berries)**
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4823245/>
http://www.circlevilleherald.com/community/new-research-investigates-strawberries-to-fight-oral-cancer-in-heavy/article_4cf24533-02a7-596c-85ec-345896a9e170.html
- **Ellagic Acid (Pommegranates & Walnuts)** <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/ellagic-acid>
<https://www.ncbi.nlm.nih.gov/m/pubmed/26634414/>
<https://www.cancertutor.com/ellagicacid/>

Supplements (16)

- **Isorhamnetin (like Resveratrol)** <https://www.spandidos-publications.com/10.3892/mmr.2014.1886>
<http://m.jbc.org/content/287/45/38028.full>
- **Galangin (Oregano)** <https://www.ncbi.nlm.nih.gov/m/pubmed/23925650/>
- **Myricetin (Berries)**
<http://www.phytochemicals.info/phytochemicals/myricetin/anticancer.php>
<https://www.ncbi.nlm.nih.gov/m/pubmed/24511002/>
- **Kaempferol (Onions, Leeks, Gingko Biloba)**
<https://www.ncbi.nlm.nih.gov/m/pubmed/25337553/>
<http://www.acgpubs.org/RNP/2014/Volume8/Issue%201/33-RNP-1304-309.pdf> http://m.fasebj.org/content/30/1_Supplement/841.5.short

Supplements (17)

- **Chrysin (Honey, Propolis)**
<http://onlinelibrary.wiley.com/doi/10.1111/jfbc.12239/full>
<http://www.nature.com/cgt/journal/v23/n1/full/cgt201565a.html>
[https://www.researchgate.net/publication/311790542 Anti-proliferative action of chrysin in colon cancer cells and its effects on signaling pathways](https://www.researchgate.net/publication/311790542_Anti-proliferative%20action%20of%20chrysin%20in%20colon%20cancer%20cells%20and%20its%20effects%20on%20signaling%20pathways)
- **Apigenin (Parsley, Onions)**
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4840993/>
- **Hesperetin (Oranges)**
<https://www.ncbi.nlm.nih.gov/m/pubmed/22899565/>
- **Naringenin (Citrus fruit)**
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4489828/>
<https://www.ncbi.nlm.nih.gov/m/pubmed/12780904/>

Supplements (18)

- **Xanthohumol** (in Hops, Dark Beers, American India Pale Ale) – supplements (more effective than Resveratrol?)
<https://www.researchgate.net/publication/51882119> Xanthohumol a Prenylated Chalcone Derived from Hops Suppresses Cancer Cell Invasion through Inhibiting the Expression of CXCR4 Chemokine Receptor
<http://oregonstate.edu/ua/ncs/archives/2005/oct/anti-cancer-compound-beer-gaining-interest>
<http://onlinelibrary.wiley.com/doi/10.1111/ijfs.12570/abstract> <https://en.wikipedia.org/wiki/Xanthohumol>
<http://onlinelibrary.wiley.com/doi/10.1002/jib.139/pdf>
- **Amygdalin – Vitamin B17 – Laetrile**: hoax or reality? Let others find out
<http://www.cancerresearchuk.org/about-cancer/cancers-in-general/treatment/complementary-alternative/therapies/laetrile> <https://draxe.com/vitamin-b17/>
- **Capsaicin (Chili Peppers)**: maybe? Low concentration promotes metastasis!
<http://www.newsmax.com/t/newsmax/article/586961>
<https://www.ncbi.nlm.nih.gov/m/pubmed/23581408/>
- **Tulsi (Holy Basil)**: Indian herb .. Maybe.. [http://www.naturalhealth365.com/0897_holy_basil_cancer.html/](http://www.naturalhealth365.com/0897_holy_basil_cancer.html)
<http://www.cancerjournal.net/article.asp?issn=0973-1482;year=2016;volume=12;issue=1;spage=20;epage=27;aulast=Baliga>
<http://www.thehealthsite.com/diseases-conditions/can-herbal-remedies-beat-cancer/>
- **Ashwagandha**: Maybe ... <http://www.collective-evolution.com/2014/11/05/5-ayurvedic-herbs-that-have-been-shown-to-destroy-cancer-cells/> <https://www.mskcc.org/cancer-care/integrative-medicine/herbs/ashwagandha> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0013536>
- **Melatonin**: helps... as does a good night's sleep! <http://www.canceractive.com/cancer-active-page-link.aspx?n=1164&title=Melatonin--self-defence-against-cancer>
- **Goshajinkigan**, a Japanese traditional herbal medicine (Kampo) – helps with Neuropathy
- **Reiki**: exercise <https://iarp.org/how-reiki-helps-cancer-patients/> <http://www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/complementary-alternative-therapies/individual-therapies/reiki>

Supplements (19)

- **Vitamin C & Doxycycline:** <http://ecancer.org/news/11808-combining-vitamin-c-with-antibiotics-destroys-cancer-stem-cells.php>
<http://aljadeed.tv/arabic/entertainment/misc/041020184>
- http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-695X2011000400027 Brazil plants & Herbs
- **Viola odorata:** Violet flower syrup (sold in Iran!) Plant AMPs (**Thionins, Plant Defensins, Cyclotides (like Violets), Small Cationic Peptides**)
<http://ifpnews.com/exclusive/production-cancer-syrup/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4359852/>
- **Versiol Derivatives from a *Paraconiothyrium* Species:**
<http://pubs.acs.org/doi/abs/10.1021/acs.jnatprod.7b00170?src=reccsys&journalCode=jnprdf&>
- **Mouthwash!! :** <http://www.beseengetscreened.com/blog/study-mouth-bacteria-may-make-colon-cancer-worse> <http://www.newser.com/story/229471/how-bacteria-in-your-mouth-make-colon-cancer-worse.html>

Our Supplements to a Complete Response

- Termuric
- Resveratrol
- Danshen
- Probiotics
- Boswellia
- Turkey Tail Mushroom
- Milk Thistle
- Cimetidine
- Modified Citrus Pectin
- Vitamin D
- Dandelion Root Extract
- ECGC
- Berberine
- Omega 3
- Quercetin + Bromelain
- Triphala
- Multivitamins & Minerals
- Shiitake
- Manuka Honey
- Ursolic Acid
- Pterostilbene
- Graviola
- Xanthohumol
- Grape Seed Extract
- Aspirin
- And Exercise
<http://www.newsmax.com/Health/Cancer/exercise-cure-cancer/2017/06/02/id/793825/>
<http://www.dailymail.co.uk/health/article-5147643/Exercise-changes-gut-bacteria-prevent-bowel-cancer.html>



Supplements & Radiotherapy

- Worries about antioxidants negating effect of radiotherapy (which uses oxygen free radicals to kill Cancer cells) – controversial, unresolved issue; conflicting data
 - <https://www.cancer.gov/about-cancer/causes-prevention/risk/diet/antioxidants-fact-sheet>
<http://www.blockmd.com/blog/using-supplements-during-radiation-treatments-is-there-a-problem>
<http://www.breastcancer.org/treatment/radiation/types/ext/expect/vitamins>
<http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.520246> <https://essentialthree.com/blog/?p=1854>
<https://www.ncbi.nlm.nih.gov/m/pubmed/24377505/> <https://newswire.net/newsroom/pr/00095244-turmeric-has-the-potential-to-fight-the-dangerous-effects-of-radiotherapy.html>
<https://thetruthaboutcancer.com/nutrients-interfere-chemo-radiation-therapy/>
<https://www.ncbi.nlm.nih.gov/m/pubmed/17761641/> <https://integrativeoncology-essentials.com/2013/03/hey-doc-can-i-take-antioxidants-during-chemo-and-radiation/>
<http://www.tandfonline.com/doi/abs/10.3109/07357907.2011.626479>
<http://m.jn.nutrition.org/content/134/11/3207S.short>
<http://cancerres.aacrjournals.org/content/63/15/4295.short>
<http://journals.sagepub.com/doi/abs/10.1177/1534735407305655>
<https://academic.oup.com/jnci/article/100/11/773/895704/Should-Supplemental-Antioxidant-Administration-Be> <http://onlinelibrary.wiley.com/doi/10.3322/canjclin.55.5.319/full>
<http://search.proquest.com/openview/4bfa63b62f5fc108b235c57134a71c05/1?pq-origsite=gscholar&cbl=32528> <http://journals.sagepub.com/doi/abs/10.1177/1534735405285882>
<http://journals.sagepub.com/doi/abs/10.1177/1534735404270578>
<http://lifeovercancerblog.typepad.com/life-over-cancer-blog/2011/07/using-supplements-during-radiation-treatments-is-there-a-problem.html> [http://www.clinicalnutritionjournal.com/article/S0261-5614\(14\)00269-6/abstract](http://www.clinicalnutritionjournal.com/article/S0261-5614(14)00269-6/abstract) <http://www.mcancer.org/living-with-cancer/mind-body-side-effects/nutrition/help-or-harm>
<http://www.canceractive.com/cancer-active-page-link.aspx?n=258> <https://www.canceractive.com/cancer-active-page-link.aspx?n=1415>

Supplements & Radiotherapy (2)

- Remove Antioxidants during Radiation, **just in case** – but keep the rest...
 - Out goes Turmeric, Boswellia, Resveratrol, Pterostilbene, Triphala, Quercetin, Turkey Tail Mushroom, Milk Thistle, Dandelion tea, ECGC, Danshen, Berberine, Omega 3, Shiitake, Ursolic acid
- Most of the supplements are also anti-oxidants (in addition to their apoptotic and anti-proliferative properties), so unfortunately you lose some benefit by not taking them during Radiation... a balancing game
- **Probiotics** definitely help radiation -
<https://www.ncbi.nlm.nih.gov/m/pubmed/20682502/> <https://integrativeoncology-essentials.com/2011/04/taking-probiotics-before-and-during-pelvic-radiation-therapy-may-reduce-diarrhea/>
- **Whey** proteins, **Milk Thistle**, **Flaxseed**, **Astralagus** and **Melatonin** help
<http://guardianlv.com/2013/06/radiation-therapy-and-7-natural-remedies-to-combat-its-effects/> <http://www.lifeextension.com/Protocols/Cancer/Radiation-Therapy/Page-06>
<http://www.lifeextension.com/protocols/cancer/radiation-therapy/page-07>
<http://www.canceractive.com/cancer-active-page-link.aspx?n=258>
- As always, **exercise** is good with Radiation <http://www.webmd.com/prostate-cancer/news/20040803/exercise-fights-fatigue-of-radiation-therapy>

Helping Radiotherapy

- <http://www.canceractive.com/cancer-active-page-link.aspx?n=258>
- <http://cancer.unm.edu/cancer/cancer-info/cancer-treatment/radiation-therapy/prevention-and-management-of-radiation-side-effects/>

About Supplements

- Fighting cancer is like wrestling a guy with six arms and four legs – each limb representing one of the many pathways and mutations the cancer has
<https://www.theatlantic.com/science/archive/2017/04/how-cancer-evolves/524064/>
- So using multiple supplements that affect multiple pathways is important to hold the cancer down and defeat it, in the same way that combining immunotherapies and chemos helps defeating it.
- You don't know exactly which supplement is helping – combining them (as long as there are no adverse effects), ensures you cover your bases
- Most of the supplements listed here were checked in the literature to make sure they don't affect the chemotherapy. Most actually enhance the effectiveness of therapy. e.g. Turmeric - <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0057218>
- Some of the supplements specifically combat metastasis, the real killer in cancer – e.g. Citrus Pectin and cimetidine.
- Combinations of supplements enhance each other's effectiveness – e.g. Turmeric and Resveratrol.

Supplements & Diet Good References

- <http://www.tbyil.com/Cancer Alternatives.htm>
- <http://www.tbyil.com/Best Cancer Fighting Foods Tony Isaacs.htm>
- <http://www.tbyil.com/Fruits That Stop Cancer Barbara Minton.htm>
- <http://www.menshealth.com/nutrition/foods-that-fight-cancer>
- Chemo & Supplements: <http://gut.bmj.com/content/43/4/578.full>
- https://www.cancertutor.com/mirror_lymphoma/
- <http://pinestreetfoundation.org/colon-cancer-chemotherapy-antioxidants/>
- [http://www.academia.edu/17195148/Supplementary Tables-Dietary phenolics against colorectal cancer. From promising preclinical results to poor translation into clinical trials pitfalls and future needs](http://www.academia.edu/17195148/Supplementary_Tables-Dietary_phenolics_against_colorectal_cancer_From_promising_preclinical_results_to_poor_transl)
- <https://www.cancerquest.org/patients/integrative-oncology/plant-products>
- <http://www.naturalnews.com/cancer cells.html>
- <http://food.ndtv.com/health/10-cancer-fighting-foods-you-should-include-in-your-diet-1682881?desktop=true>

Supplements & Diet Good References (2)

- <https://www.fda.gov/drugs/guidancecomplianceregulatoryinformation/enforcementactivitiesbyfda/ucm171057.htm>
- <http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-01>
- <http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-02>
- <http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-03>
- <http://www.lifeextension.com/Protocols/Cancer/Colorectal/Page-refs>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2947820/>
- <http://www.peanut-institute.org/health-and-nutrition/disease-prevention/other-diseases.asp>
- <http://www.askdrsears.com/topics/feeding-eating/family-nutrition/anticancer/12-dietary-changes-will-lower-your-cancer-risk>
- <https://www.cancer.gov/about-cancer/treatment/cam/patient/cam-topics-pdq>
- <http://www.cancerresearchuk.org/about-cancer/cancers-in-general/treatment/complementary-alternative/about/harm/the-safety-of-vitamins-and-diet-supplements>
- <http://food.ndtv.com/health/power-of-ayurveda-6-herbs-that-can-prevent-risk-of-cancer-1674778>
- https://www.mdanderson.org/publications/focused-on-health/september-2015/FOH-prevention-groceries.html?cmpid=foh_fb_prevention_diet

Supplements and Diet Good References (3)

- https://www.cityofhope.org/nutrition-tips-for-cancer-patients?utm_campaign=MKT_NTR_Supporter_Breakthroughs_PatientNutritionTips_201709021_B&utm_medium=email&utm_source=Eloqua&EID=CCITH000000013224&bl=mk
- <https://www.news-medical.net/news/20171221/Specific-diets-may-help-prevent-colorectal-cancer-in-high-risk-groups.aspx>
- <https://cancercompass.com/cancer-news/article/59892.htm>
- <http://www.telegraph.co.uk/health-fitness/nutrition/five-cancer-preventing-foods-get-diet/>
- https://www.webmd.com/colorectal-cancer/ss/slideshow-foods-prevent?ecd=wnl_can_050118&ctr=wnl-can-050118_nsl-stry_1&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d

Cathy Stavropoulos's (13 yr stage 4 CRC survivor) supplements

- MULTIPLE VITAMIN 1 X PER DAY
- SUPER B COMPLEX 1 X PER DAY
- VITAMIN B 3 2000 IU 1 X PER DAY
- VITAMIN E 400 IU 1 X PER DAY
- VITAMIN C 1000 MG 1 X PER DAY
- BIOTIN 5000 MCG 1 X PER DAY
- MAGNESIUM 250 MG 1 X PER DAY
- ALPHA LIPOIC ACID 600 MG 1 X PER DAY
- OMEGA 3 FISH OIL 1000 MG 1 X PER DAY
- GLUCOSAMINE 1500 MG 1 X PER DAY (for joint pain)
- ROYAL JELLY (QUEEN BEE HONEY) SMALL AMOUNT UNDER THE TONGUE 1 X PER DAY
- PROPOLIS (BEE POLLEN) 1/2 TSPN 1 X PER DAY
- GOJI JUICE (LYCIUM BARBARUM) 4 OUNCES 1 X PER DAY

Stavropolous at Marathon



Where to Get Supplements

- Walgreens, Walmart and similar shops
- Websites:
 - Puritan's Pride <http://www.puritan.com/>
 - Jet.com <https://jet.com/>
 - <https://www.canadadrugs.com/>
 - <http://www.iherb.com/>
 - <https://www.healthyhabitssliving.com/>
 - Many others
- Check ingredients and dosage before buying – can make a huge difference
- Look for products with highest bio-availability (e.g. Curcuminoids in Turmeric with Pepperine for improved absorption)

Recurrence

- The biggest threat – almost 100% for stage 4! <http://www.surgonc.org/docs/default-source/fellows-articles-january-2015/early-recurrence-after-liver-resection-for-colorectal.pdf?sfvrsn=2>
<https://www.hindawi.com/journals/isrn/2015/790186/>
- Culprit: Cancer Stem Cells (CSCs) and Circulating Tumor Cells (CTCs) that regenerate the cancer. You need to stop Metastasis and Proliferation! You need to kill the Cancer Stem Cells! But other cells (mature cells) are also culprits: <https://futurism.com/mature-cells-important-role-onset-cancer/>
- Surgery enhances recurrence!: <http://www.lifeextension.com/magazine/2009/12/preventing-surgery-induced-cancer-metastasis/page-01?p=1> maybe
<http://jamanetwork.com/journals/jamasurgery/fullarticle/401397>
<https://www.cancertreatmentwatch.org/general/biopsies.shtml> <http://blog.dana-farber.org/insight/2017/05/can-a-tumor-biopsy-or-surgery-cause-cancer-to-spread/>
 - **PSK, Cimetidine, Modified Citrus Pectin** help reduce recurrence from surgery
- Complete response reduces it (to 60%)? [http://www.thelancetnorway.com/journals/lanonc/article/PIIS1470-2045\(10\)70172-8/fulltext](http://www.thelancetnorway.com/journals/lanonc/article/PIIS1470-2045(10)70172-8/fulltext) <http://www.surgonc.org/docs/default-source/fellows-articles-january-2015/early-recurrence-after-liver-resection-for-colorectal.pdf?sfvrsn=2>
- Even Anesthesia technique has an impact!
<https://academic.oup.com/gastro/article/4/1/30/2404409/Impact-of-anaesthetic-technique-on-survival-in-hp>
<https://www.hindawi.com/journals/tswj/2014/328513/>
- Lymph nodes not always the culprit <http://ecancer.org/news/11962-cancer-may-metastasize-without-lymph-node-involvement.php>
- Kill it slowly: <https://www.labroots.com/trending/cancer/7488/kill-cancer-gently-kill-cancer-completely>

Recurrence (2)

- General guidance: exercise plus supplements (many same for CRC listed above, like Turmeric): <http://www.canceractive.com/cancer-active-page-link.aspx?n=780> <http://jeffreydachmd.com/2016/03/targeting-cancer-stem-cells-with-nontoxic-therapies/>
<http://www.healthiestalternative.com/cancer-stem-cell-killing-foods-and-herbs-smarter-than-chemo-and-radiation/> <http://drjockers.com/top-12-cancer-stem-cell-killing-nutrients/> <http://www.stethnews.com/2420/what-you-need-to-eat-to-kill-cancer-stem-cells/> <http://bottomlineinc.com/5-supplements-that-help-prevent-cancer-recurrence/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3284520/#!po=36.8182>
<https://thescienceofnutrition.me/2012/11/09/surviving-cancer-means-preventing-metastasis/>
- <https://www.hopeful.org/home> a support group

Killing Cancer Stem Cells

- **Bitter Melon:** extract Momordica charantia – like marmelin, honokiol
<http://www.healthy-holistic-living.com/bitter-melon-discovered-kill-cancer-stem-cells.html> <https://www.hindawi.com/journals/ecam/2013/702869/>
<http://www.kucancercenter.org/about-us/news/therapies-for-colon-cancer-naturally-speaking> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5276711/>
- **Purple Potatoes:** <http://blogs.naturalnews.com/study-compounds-found-purple-potatoes-may-kill-colon-cancer-stem-cells/>
<http://news.psu.edu/story/367072/2015/08/26/research/colorful-potatoes-may-pack-powerful-cancer-prevention-punch>
- **Pterostilbene:** much better than Resveratrol! (**Blueberries**) ; sensitizes 5FU
<https://www.sciencedaily.com/releases/2007/03/070325111552.htm>
<http://mobile.nutraingredients-usa.com/Research/Pterostilbene-more-potent-than-resveratrol-for-colon-health-Study>
<http://www.nature.com/articles/srep15239>
<https://www.ncbi.nlm.nih.gov/m/pubmed/25745778/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3201709/>

Killing Cancer Stem Cells (2)

- **Resveratrol & GrapeSeed Extract:**

<http://www.healingcancernaturally.com/grapeseed-resveratrol-pterostilbene.html> <http://www.belmarrahealth.com/grape-compound-found-work-synergy-providing-anti-cancer-properties/>

- **WaterCress & Broccoli:** <https://news.therawfoodworld.com/how-to-kill-cancer-stem-cells/>
- **Green Tea:** <http://scrubbing.in/how-green-tea-kills-cancer-stem-cells/>
- **Curcumin/Termuric:** ?? Might help some CSCs survive??
<http://cancerres.aacrjournals.org/content/74/9/2487>
- **Metformin:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2756324/>
<http://weeksmd.com/2016/08/metformin-prostate-cancer-stem-cells/>
<http://cancerres.aacrjournals.org/content/69/19/7507.short> (with DOXORUBICIN)

Killing CSCs (3)

- **Chloroquine**: nope: double-edged sword (possible kidney damage)? Also helps 5FU overcome resistance.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3742095/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4138251/>

https://www.researchgate.net/profile/Tomonori_Kimura/publication/234048306_Chloroquine_in_Cancer_Therapy_A_Double-Edged_Sword_of_Autophagy/links/574c9a8608ae8bc5d15a3727.pdf

<http://meetinglibrary.asco.org/content/153291-156>

- **Sulfasalazine and 5-aminosalicyclic acid (5-ASA)**: moderate impact

<http://onlinelibrary.wiley.com/store/10.1046/j.1365-2036.18.s2.3.x/asset/j.1365-2036.18.s2.3.x.pdf> <http://meetinglibrary.asco.org/content/134696-144>

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0094208>

- **Parthenolide (feverfew)**: moderate impact ; kills stem cells; but little bio-

availability <https://www.ncbi.nlm.nih.gov/m/pubmed/23507557/>

<http://www.denvernaturopathic.com/news/feverfew.html>

<http://link.springer.com/article/10.1023%2FB%3ADRUG.0000026256.38560.be>

Killing CSCs (4)

- **Targeted Therapies:** <https://www.ncbi.nlm.nih.gov/m/pubmed/20420952/>
<https://cancerci.biomedcentral.com/articles/10.1186/s12935-015-0163-7>
[https://www.researchgate.net/profile/Alfredo Salerno/publication/24439391 Efficient Killing of Human Colon Cancer Stem Cells by T Lymphocytes/links/0fcfd50c9918b2a138000000/Efficient-Killing-of-Human-Colon-Cancer-Stem-Cells-by-T-Lymphocytes.pdf](https://www.researchgate.net/profile/Alfredo_Salerno/publication/24439391_Efficient_Killing_of_Human_Colon_Cancer_Stem_Cells_by_T_Lymphocytes/links/0fcfd50c9918b2a138000000/Efficient-Killing-of-Human-Colon-Cancer-Stem-Cells-by-T-Lymphocytes.pdf)
- **TR4:** maybe? <http://www.canceractive.com/cancer-active-page-link.aspx?n=3524>
- **Aspirin:** <https://blog.cirm.ca.gov/2014/11/06/unlocking-the-wonder-drugs-secrets-aspirin-fends-off-colon-cancer-by-killing-faulty-intestinal-stem-cells/>
- **Ursolic Acid: (Holy Basil or Rosemary Leaf)** ; also sensitizes chemo; **fights KRAS mutation** <http://link.springer.com/article/10.1007/s13238-016-0295-0>
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0063872>
[https://repositorium.sdum.uminho.pt/bitstream/1822/12236/1/Xavier Cancer%20Leters 2009_postprint.pdf](https://repositorium.sdum.uminho.pt/bitstream/1822/12236/1/Xavier_Cancer%20Leters_2009_postprint.pdf) <https://selfhacked.com/2016/07/12/need-know-ursolic-acid-potent-anti-inflammatory/>
- **Betulinic Acid: (Chaga)** maybe not for colon? (RAID study)
<https://www.ncbi.nlm.nih.gov/m/pubmed/26647913/>
https://en.wikipedia.org/wiki/Betulinic_acid

Killing CSCs(5)

- **New approaches:** <http://jcmtjournal.com/article/view/1501>
- **Drugs in the pipeline:** <http://gavinpublishers.com/wp-content/uploads/2016/09/GSRT-035102.pdf>
- **Etoposide:** like salinomycin and abamectin, very effective drug for CSCs; expensive, prescription, with side effects like chemo <https://en.wikipedia.org/wiki/Etoposide>
<http://www.sciencedirect.com/science/article/pii/S0092867409007818>
- **Salinomycin:** expensive, prescription, like chemo with side effects
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3516046/>
<https://bmccancer.biomedcentral.com/articles/10.1186/s12885-016-2879-8>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3909296/>
<http://www.cancertreatmentsresearch.com/?p=49> <https://en.wikipedia.org/wiki/Salinomycin>
- **Coffee:** 2-4 cups a day helps!
<https://www.sciencedaily.com/releases/2015/08/150817161201.htm>
<http://www.naturalmedicinejournal.com/journal/2015-11/coffee-may-reduce-colon-cancer-recurrence>
- **HIPP:** <https://m.medicalxpress.com/news/2017-07-uncovers-potential-silver-bullet-colon.html>
- **Taxol?** Low effect unless synergizes with other <http://www.nature.com/articles/s41598-017-01480-2> [http://onlinelibrary.wiley.com/doi/10.1002/1097-0215\(20000820\)90:4%3C175::AID-IJC1%3E3.0.CO;2-W/full](http://onlinelibrary.wiley.com/doi/10.1002/1097-0215(20000820)90:4%3C175::AID-IJC1%3E3.0.CO;2-W/full)

Killing CSCs (6)

- Cadherin-22 blockers

<http://www.deccanchronicle.com/lifestyle/health-and-wellbeing/191117/researchers-discover-way-to-prevent-cancer-from-spreading.html>

- Kill it slowly and remove Debris!

https://www.eurekalert.org/pub_releases/2017-12/bawh-rcc120417.php

Circulating Tumor Cells

- Help predict recurrence

https://en.m.wikipedia.org/wiki/Circulating_tumor_cell

http://www.questdiagnostics.com/testcenter/testguide.action%3Fdc%3DTS_CellSearch <https://clinicaltrials.gov/ct2/show/NCT02874885>

<http://www.mayomedicallaboratories.com/articles/features/ctc/>

<https://www.genomeweb.com/cancer/circulating-tumor-dna-predicts-post-surgery-colon-cancer-recurrence-asco-presenter-says>

- Maybe? Oncs are doubtful of value and clinical significance (a plus?? ☺)

http://www.captodayonline.com/Archives/cover_stories/0105Tumor.html

- Quest Diagnostics/ Cellsearch \$500 <https://www.cellsearchctc.com/about-cellsearch/what-is-cellsearch-ctc-test>

Recurrence Trials

- **SWOG S0820 (PACES trial)**- Sulindac & Eflorinitrine **for stage1-3 only**
http://canprevent.com/documents/Intl-Innovation_p44-46.pdf
<https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCT01349881&r=>
<https://clinicaltrials.gov/ct2/show/NCT01349881?term=NCT01349881&rank=1>
- **hTERT trial in Philadelphia – not eligible (need surgery)**
<https://clinicaltrials.gov/ct2/show/NCT02960594> Contact: Colleen Redlinger 215-220-9693 colleen.redlinger@uphs.upenn.edu
- **ICG-001** - <https://news.usc.edu/73922/two-scientists-seek-to-stop-cancer-in-its-tracks/> Heinz-Josef Lenz and Michael Kahn at USC-Norris “Wnt signaling pathway”
- **BBI608** - <http://www.pnas.org/content/112/6/1839.full.pdf>
- **Oncovax (Vaccinogen) – Dr Hanna**, not open yet for stage 4
<https://coloncancernewstoday.com/2014/09/03/vaccinogens-oncovax-enters-phase-iiib-clinical-trial-stage-2-colon-cancer/>

Recurrence Trials (2)

- **Regorafenib:** <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=780106&version=HealthProfessional&protocolsearchid=6252091>
- **Entrectinib: STARTRK trial (MSKCC)- Not eligible – need NTRK Fusion - negative**
<https://s3.amazonaws.com/www.startrktrials.com/STARTRK-2-Doctor-Discussion-Guide.pdf> <https://global.startrktrials.com/>
- **Myb Vaccine (Australia):** <http://oncologynews.com.au/peter-mac-trial-of-a-new-vaccine-to-prevent-recurrence-of-colorectal-cancer/>
- **Joe Eid-** Merck... search
- **John Hopkins Vaccine plus Cytotaxan: J0745**
http://www.hopkinscoloncancercenter.org/HCT/HCT_ClinicalTrials_View.aspx?CurrentUDV=59&HCT_CT_ID=902A58E8-7229-4293-ABE2-77E71BB44B7C
<https://clinicaltrials.gov/ct2/show/NCT00656123> Carol Judkins Coordinator-RN: judkica@jhmi.edu Phone: 410-614-5241 – **closed**; Nurse Navigator to help look for others (none available now). Jane Zorzi 410-614-5818 jzorzi1@jhmi.edu.

Recurrence Trials (3)

- **CTCA trials:** Clinical Trials team at clinicaltrials@ctca-hope.com or contact Oncology Information Specialists at 888-841-9129. **Jonathan Szilvagi** ; Clinical Research Study Coordinator; Cancer Treatment Centers of America; 14200 Celebrate Life Way, Goodyear, AZ 85338 ; O: 623-207-3976 F: 623-932-8606 E: Jonathan.Szilvagi@ctca-hope.com W: cancercenter.com
- **Mt Sinai trials:** Tel: 212-824-7309 - **The Cancer Clinical Trials Office** ccto@mssm.edu
- **Mayo Clinic Trials:** **Cancer-related clinical studies** phone: 855-776-0015 (toll-free) – Lisa Stephens: 1-507-284-1072 Stephens.Lisa@mayo.edu – **no trials available, but provided links** and clues to other teams
- https://clinicaltrials.gov/ct2/results?term=rectal+cancer+recurrence+prevent&re_cr=Open
- **Colon Cancer Alliance** – <https://www.ccalliance.org/> - Navigator line to assist in clinical trial searches – 866.278.0392 or 646-277-4064 (Patrick Meins ext. 248 pmeins@emergingmed.com) (Helpline 877.422.2030) – **only found hTERT trial already checked.**

Recurrence Trial (4)

- **Emerging Med** – assist in locating clinical trials - 1-877 601 8601 (also serves Colon Cancer Alliance) <https://app.emergingmed.com/emed/home> jeanne@emergingmed.com 877-601-8601 ext. 223
- CTC & Bio-Markers (Taiwan):
<https://clinicaltrials.gov/ct2/show/NCT03013868?term=NCT03013868&ranks=1>
- Add-Aspirin (London):
<https://clinicaltrials.gov/ct2/show/NCT02804815?term=NCT02804815&ranks=1>
- Aspirin (China):
<https://clinicaltrials.gov/ct2/show/NCT02607072?term=NCT02607072&ranks=1>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3284520/>

Recurrence Trials (5)

- Diet & Physical Activity (Hong Kong):
<https://clinicaltrials.gov/ct2/show/NCT01708824?term=NCT01708824&rank=1>
- <https://patient.cureforward.com/> - assigns an actual guide to help you – but only if have tumors, not if NED. Paul Beard, 263 Summer Street, Boston, Mass 02210; 1- 617 804 5156
patient.support@cureforward.com

Trials - On the Horizon

- **EBC-46 Australia**, kills tumors. <http://www.snopes.com/scientists-find-australian-berry-can-cure-cancer-48-hours/>
- **BMI-1 Inhibitors**: Toronto - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4808030/>
<http://www.ctvnews.ca/health/toronto-researchers-disable-gene-that-controls-colon-cancer-stem-cells-1.1569219>
- **Psilocybin**: reduce anxiety <http://abcnews.go.com/Health/ucla-study-finds-magic-mushrooms-curb-anxiety-advanced/story?id=11568335>
- **Tivozanib**: better than avastin: <http://www.aveooncology.com/wp-content/uploads/2014/09/AVEO-2014-ESMO-Tivo-v7-FINAL.pdf>
- **Lonsurf – TAS 102**: <http://www.servier.com/content/patients-advanced-metastatic-colorectal-cancer-europe-now-have-new-treatment-option-lonsurf%C2%AE>
- **FANG vaccine**: <https://www.ncbi.nlm.nih.gov/pubmed/23461471>
- **GI 4000 vaccine**: <https://www.globeimmune.com/cancer/gi-4000/>

Trials (2)

- **Oncolytic virus trial (Dr Harb):** <http://meetinglibrary.asco.org/content/168208-176>
<https://www.cancertherapyadvisor.com/brain-cancer/oncology-oncolytic-virus-interest-growing/article/749254/>
- **Immunotherapy trials:** <http://www.cancerresearch.org/cancer-immunotherapy/impacting-all-cancers/colorectal-cancer>
- **Xilonix:** <http://news.cancerconnect.com/encouraging-overall-survival-and-well-being-for-xilonix-in-advanced-colorectal-cancer/>
- **BBI608 (Stem Cell Inhibitor)** - Napabucasin: <http://www.targetedonc.com/conference/2016-asco-gi/first-in-class-cancer-stemness-inhibitor-promising-results-advanced-colorectal-cancer>
- **NPC-1C** – Ensituximab: <http://www.targetedonc.com/news/ensituximab-npc-1c-shows-promise-and-good-tolerability-in-refractory-metastatic-colorectal-cancer>
- **Zaltrap** – Aflibercept:
<https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm314372.htm>
- **Uracil- Tegafur:** last chance
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0162400>
- **Y-90 radio embolization:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4110696/>

Trials (3)

- **BI 695502**: biosimilar to Avastin - <https://clinicaltrials.gov/ct2/show/NCT02776683>
- **Cobimetinib + Atezolizumab** (for KRAS + MSS stable): (Not successful)
<http://www.cancertherapyadvisor.com/asco-2016/colorectal-cancer-cobimetinib-atezolizumab-treatment-active/article/500983/> [https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(19\)30027-0/fulltext](https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(19)30027-0/fulltext)
- **Reolysin**: Oncolytics - effective only in women!
<http://www.oncolyticsbiotech.com/news/oncolytics-biotech-inc-reports-preliminary-data-from-randomized-phase-ii-study-of-reolysin-in-colorectal-cancer/>
- **RRX-101 GP6D Inhibitor**: <https://www.ncbi.nlm.nih.gov/pubmed/27232511>
- **TIL cells: for KRAS mutant cells** - <https://www.nih.gov/news-events/news-releases/cellular-immunotherapy-targets-common-human-cancer-mutation>
- **BAX 69 – imalumab**: <https://clinicaltrials.gov/ct2/show/NCT02448810>
- **Prexasertib** Chk1 inhibitor: <https://clinicaltrials.gov/ct2/show/NCT02860780>
- **Nintedanib + Capecitabine** (Roswell Park, Buffalo):
<https://clinicaltrials.gov/ct2/show/NCT02780700>

Trials (4)

- **NCB-0846** Japan Wnt Inhibitor, kills stem cells (Carna Bio-Sciences) plus NCB-0594 TNIK inhibitor
<http://www.nature.com/articles/ncomms12586> https://www.eurekalert.org/pub_releases/2016-08/r-doa082416.php <http://www.carnabio.com/english/discovery/pipeline-target.html>
- **Fe-bLF** nano-formulation targets survivin to kill stem cells
<https://www.ncbi.nlm.nih.gov/pubmed/25017148>
- **Oncovax trial (Dr Hanna):** <http://www.vaccinogeninc.com/pipeline/oncovax-immunotherapy-colon-cancer>
- **Vitamin C Trials:** <https://www.ncbi.nlm.nih.gov/m/pubmed/26541605/>
<http://neilriordanivc.com/2015/06/vitamin-c-and-cancer-neither-proved-or-disproved-in-montreal/>
- **Rigvir:** Latvia <https://medicalxpress.com/news/2016-08-virus-rigvir-cancer-survival.html>
- **Nant Vaccine (Cancer Moonshot) :** <http://medcitynews.com/2017/02/shoon-shiongs-cancer-vaccine/> <http://www.fiercebiotech.com/biotech/soon-shiong-s-io-outfits-get-fda-nod-to-start-cancer-vaccine-trials>
- **CRC Trials:** <http://www.cancerresearch.org/cancer-immunotherapy/impacting-all-cancers/colorectal-cancer>

Trials (5)

- **Cancer killing Proteins** <http://mediarelations.cornell.edu/2016/01/12/cancer-killing-proteins-destroy-tumor-cells-in-bloodstream/>
- **Nanotechnology** to kill Circulating Tumor Cells
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4174536/>
<http://ecancer.org/news/11893-metastasis-tackled-with-gold-nano-rods.php>
<http://oncpracticemanagement.com/issue-archive/2014/may-2014-vol-4-no-3/new-trials-under-way-05-2014/>
- **CAR-T Cells:** <https://futurism.com/4-gene-therapy-treatment-can-bring-terminal-cancer-patients-to-complete-remission/>
http://www.futureofpersonalhealth.com/sponsored/cancer-therapies-that-might-change-the-treatment-paradigm?utm_source=keywee&utm_medium=paid&kwp_0=372507&kwp_4=1389817&kwp_1=612348
- **Vaccines:** https://www.labroots.com/trending/cell-and-molecular-biology/5427/dna-vaccine-helps-stimulate-natural-tumor-defenses?utm_content=buffer355d8&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

Trials (6)

- **Triple Therapy Patch:** for rectal tumors (not metastatic)
http://www.upi.com/Health_News/2016/07/29/Triple-therapy-patch-may-treat-prevent-recurrence-of-colon-cancer/6261469815370/
- **Mologen DNA Immunotherapy:** https://coloncancernewstoday.com/2017/02/28/mologens-dna-based-immunotherapy-shows-promise-in-preclinical-colon-cancer-models/?utm_source=CC+News+Today&utm_campaign=c5db847921-RSS WEEKLY EMAIL CAMPAIGN&utm_medium=email&utm_term=0_5651da9ec2-c5db847921-72122001
- **CBT-501 Therapy:** <https://coloncancernewstoday.com/2017/03/09/cbt-pharmaceuticals-presents-data-demonstrating-anti-tumor-activity-of-its-programmed-death-1-antibody-cbt-501-at-asco-sitc-clinical-oncology-symposium/>
- **New Bio-Markers:** https://coloncancernewstoday.com/2017/02/21/two-new-biomarkers-may-help-predict-colorectal-cancer-patients-response-to-therapy/?utm_source=CC+News+Today&utm_campaign=72987eb447-RSS WEEKLY EMAIL CAMPAIGN&utm_medium=email&utm_term=0_5651da9ec2-72987eb447-72122001
- **LONSURF® (trifluridine/tipiracil):** <http://www.servier.com/content/patients-advanced-metastatic-colorectal-cancer-europe-now-have-new-treatment-option-lonsurf®>

Trials (7)

- **New Anti-Bodies:** https://coloncancernewstoday.com/2017/02/16/researchers-develop-potential-antibody-to-battle-colon-other-cancers/?utm_source=CC+News+Today&utm_campaign=72987eb447-RSS WEEKLY EMAIL CAMPAIGN&utm_medium=email&utm_term=0_5651da9ec2-72987eb447-72122001
- **Starve Tumors:** <https://www.labroots.com/trending/cancer/5534/starve-cancer-cells>
- **Nivolumab:** <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=758063&version=HealthProfessional&protocolsearchid=6252091>
- **Vaccines - NEO-PV-01:** <http://www.fiercebiotech.com/biotech/advaxis-gets-green-light-for-trial-amgen-partnered-neoantigen-cancer-vaccine> WT1 <http://www.ktn.com/new-dna-vaccine-design-could-help-in-cancer-fight/>
- **CryoVax:** <https://immuno-oncologynews.com/2016/11/14/clinical-trial-assess-next-generation-immunotherapy-metastatic-colon-cancer/>

Trials (8)

- **IMMU-130:** <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=734434&version=HealthProfessional&protocolsearchid=6252091>
- **Celecoxib, Recombinant Interferon Alfa-2b, and Rintatolimod Before Surgery:** <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=728686&version=HealthProfessional&protocolsearchid=6252091>
- **Regorafenib:** <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=780106&version=HealthProfessional&protocolsearchid=6252091>
- **Immune Checkpoint Inhibitors:** http://www.nature.com/bjc/focus/Immune_checkpoint_inhibitors/index.html?WT.mc_id=FBK_BJC_1703_IMMUNOFOCUS_SRG
- **Personalized Vaccines:** <http://www.sciencemag.org/news/2017/04/personalized-tumor-vaccines-keep-cancer-check>

Trials (9)

- **AMC303 Therapy** - <https://coloncancernewstoday.com/2017/04/20/colon-cancer-therapy-amc303-inhibited-pancreatic-cancer-in-mouse-model/>
- TAPUR study (reuse of medicine on other cancers) -
<http://www.cancercenter.com/ctca-difference/tapur/>
- Nanoparticles:
<https://www.sciencedaily.com/releases/2017/05/170501131753.htm>
- RLR Agonists – Kineta
<https://coloncancernewstoday.com/2017/05/04/kineta-rlr-agonist-promote-tumor-regression-and-adaptive-immune-response-in-colon-cancer-model/>
- Tumor Blood Vessels:
<https://www.labroots.com/trending/cancer/5780/immunotherapy-blocking-cancer-blood-vessels>

Trials (10)

- Stem Cell Vaccines: <http://www.newswise.com/articles/view/674448/?sc=c9>
- Nanoparticle Vaccines: <https://m.phys.org/news/2017-04-nanoparticle-vaccine-potential-immunotherapy-multiple.html>
- Personalized Vaccines: <https://futurism.com/clinical-trials-of-a-new-cancer-vaccine-show-that-it-may-actually-work/>
- **Immunotherapy with radiation:**
<https://jtc.biomedcentral.com/articles/10.1186/s40425-016-0156-7>
<https://clinicaltrials.gov/ct2/show/NCT02239900>
<https://clinicaltrials.gov/ct2/show/NCT02303990> <http://www.med.wisc.edu/news-events/innovative-immunotherapy-trial-colorectal-cancer/48870> **Joe Eid/Merck Trial**
- **MSS Trial search** https://coloncancernewstoday.com/2017/05/18/colorectal-cancer-survivor-updates-microsatellite-stable-crc-clinical-trial-finder/?utm_source=CC+News+Today&utm_campaign=3de93ed3b1-RSS_WEEKLY_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_5651da9ec2-3de93ed3b1-72122001

Trials (11)

- T-Reg memory: <http://mentalfloss.com/article/501054/new-cancer-treatment-%25E2%2580%259Cremembers%25E2%2580%259D-tumors-and-won%25E2%2580%2599t-let-them-regrow>
- TILs: KRAS specific! https://www.cancer.gov/news-events/press-releases/2016/immunotherapy-targets-kras?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+ncinewsreleases+%28NCI+News+Releases%29
- lymphocytic choriomeningitis virus (LCMV):
<http://food.ndtv.com/health/scientists-discover-designer-virus-that-can-help-kill-cancer-1704530?desktop=true>
- Gold Nanorods: <https://www.labroots.com/trending/cancer/6325/scientists-breaking-cancer-s-legs>
- Cooling Caps: <https://www.labroots.com/trending/cancer/6381/cooling-cap-device-scores-nod-fda>

Trials (12)

- **Doxorubicin & fidarestat, an AR inhibitor:**
<https://www.specialtypharmacytimes.com/news/new-drug-fortifies-efficacy-of-common-cancer-drug>
- **Nivolumab:** <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/colorectal-cancer-nivolumab-durable-response-treatment/article/676472/>
- **HET0016**, which inhibits the actions of 20-HETE:
<http://www.medicalnewstoday.com/articles/318438.php>
- **CIMAVAX** (Cuba): <http://healthyremedieshouse.com/cuba-found-a-cancer-vaccine-more-than-4-thousand-people-have-already-been-cured-by-it/>
- **OncoPherese**: (alternate?) <https://www.int-imm-foundation.com/en/oncopherese/about-oncopherese.htm>
- **Regorafenib:** <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/clinical-trial-phase-3-regorafenib-adjuvant-colon-cancer-treatment/article/695496/>

Immunotherapy Trials (1)

- **Anti-CD27 (Varlilumab) and Anti-PD-1 (Nivolumab) – MSKCC**
<https://clinicaltrials.gov/ct2/show/NCT02335918> **not recruiting**
- **immunology with Radiation** <https://jite.biomedcentral.com/articles/10.1186/s40425-016-0156-7#Tab3> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4246656/>
- <https://www.cancerresearch.org/scientists/science-of-immunotherapy/cancer-types/colorectal-cancer> http://www.webmd.com/cancer/immunotherapy-approach-17/slideshow-cancer-treatments?ecd=wnl_can_052317&ctr=wnl-can-052317_nsl-stry_1&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d
- **FPA008 in Combination With Nivolumab - MSKCC**
https://clinicaltrials.gov/ct2/show/study/NCT02526017?show_locs=Y#locn
- **Nivolumab Plus Chemotherapy – CTCA Arizona**
<https://www.clinicaltrials.gov/ct2/show/NCT02423954>
- **MK-3475 – John Hopkins Maryland** <https://clinicaltrials.gov/ct2/show/NCT02512172>
- **Pembrolizumab and Ziv-aflibercept – Boston**
<https://clinicaltrials.gov/ct2/show/NCT02298959>

Immunotherapy Trials (2)

- Nivolumab, and Nivolumab in Combination With Other Anti-cancer Drugs – Allentown PA- Checkmate142 **not recruiting**
https://clinicaltrials.gov/ct2/show/study/NCT02060188?show_locs=Y#locn
- FPA008 in Combination With Nivolumab – MSKCC
https://clinicaltrials.gov/ct2/show/study/NCT02526017?show_locs=Y#locn
- CPI-444 Alone and in Combination With Atezolizumab – (MSI) –MSKCC
https://clinicaltrials.gov/ct2/show/study/NCT02655822?show_locs=Y#locn
- Ipilimumab and Stereotactic Body Radiation Therapy (SBRT) – Anderson/Houston <https://clinicaltrials.gov/ct2/show/NCT02239900>
- MEDI4736 in Combination With Tremelimumab – not recruiting
<https://clinicaltrials.gov/ct2/show/NCT01975831>
- L19-IL2 With SABR – Maastricht
<https://clinicaltrials.gov/ct2/show/NCT02086721>
- Pembrolizumab Plus Radiotherapy or Ablation – two tumors! – MSKCC
<https://clinicaltrials.gov/ct2/show/NCT02437071>

Immunotherapy Trials (3)

- REGN2810 (Anti-PD-1) – NYC
https://clinicaltrials.gov/ct2/show/study/NCT02383212?show_locs=Y#location
- RADVAX: Pembrolizumab With Hypofractionated Radiotherapy – U. of Penn, Philadelphia <https://clinicaltrials.gov/ct2/show/NCT02303990>
- PD1 Blockade by Pembrolizumab With Stereotactic Body Radiotherapy – not recruiting <https://clinicaltrials.gov/ct2/show/NCT02608385>
- TILs – Maryland <https://clinicaltrials.gov/ct2/show/NCT01174121>
- Advanced CRC Trials:
<http://trialfinder.fightcrc.org/trials/?searchTerm=&dateAddedFrom=&dateAddedTo=&nctNumber=&therapyName=> <http://trialfinder.fightcrc.org/>
- Irinotecan and AZD1775, a Selective Wee 1 Inhibitor, in RAS or BRAF Mutated – NYC <https://clinicaltrials.gov/ct2/show/NCT02906059>

Immunotherapy Trials (4)

- Durvalumab and Tremelimumab, Administered With Radiation Therapy or Ablation – MSKCC - 2 tumors!
<https://clinicaltrials.gov/ct2/show/NCT03122509?term=NCT03122509&rank=1>
- INCAGN01876 Combined With Immune Therapies – Hackensack
<https://clinicaltrials.gov/ct2/show/NCT03126110>
- TILs: KRAS specific! https://www.cancer.gov/news-events/press-releases/2016/immunotherapy-targets-kras?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+ncinewsreleases+%28NCI+News+Releases%29
- TRK – (StarTRK trials)- Loxo (MSK): <http://markets.businessinsider.com/news/stocks/r-loxos-targeted-drug-helps-variety-of-advanced-cancers-in-small-study-2017-6-1002065239>
- The MEK inhibitor **Mekinist (trametinib)** in combination with **Opdivo (nivolumab)** – or Opdivo plus **Yervoy (ipilimumab)**: https://coloncancernewstoday.com/2017/06/08/bristol-myers-squibb-novartis-to-test-mekinist-opdivo-combination-in-advanced-colorectal-cancer/?utm_source=CC+News+Today&utm_campaign=515c12c2a5-RSS WEEKLY EMAIL CAMPAIGN&utm_medium=email&utm_term=0_5651da9ec2-515c12c2a5-72122001
- CAR T-Cells: <https://www.labroots.com/trending/cancer/6494/car-t-cell-immunotherapy-cusp-fda-approval>
- Celyad SHRINK trials: <https://www.celyad.com/en/news/celyad-announces-initiation-of-the-shrink-trial>
<https://labiotech.eu/celyad-car-t-trial-colorectal-cancer/>

Last Chances

Back **Colo-Rectal Cancer Med**
Online
Jun 16, 2017

User_1451
Sam, Mistletoe and Vitamin C infusion are great for keeping cancer at bay. Have to see a naturopath. It's all about good immune health. Immune health isn't something hardly any oncologist will tell you about. They are their to treat your flies but don't help you get rid of your garbage. Google The Truth About Cancer and watch the documentaries. Also check out CHIPSA and HOPE4CNCER.

17:07

Back **Colo-rectal (bowel) Ca...**
Online

A new immunotherapy clinical trial for colorectal cancer patients!

This phase 2 trial is conducted at the MD Anderson Medical Center in Arizona entails an immunotherapy cancer vaccine product for patients with chemotherapy-refractory (third line) metastatic colorectal cancer (mCRC).

In this trial, the patients receive cryoablation (a technique of extreme cold aimed at the cancer cells) followed by an injection of bioengineered immune cells into the tumor. This process is intended to create a vaccine inside the body.

According to the company that initiated the trial, this procedure modulates the immune response and educates the immune system to kill other tumor cells where ever they reside in the body.

Last Chances (2)

- **TAS-102:** <http://esmoopen.bmj.com/content/2/4/e000263?rss=1&hootPostID=6b4fe897653dfbaffe889333dec02186>
- If using Folfiri – hair loss- **Cooling Caps** can help - FDA approved
<https://twitter.com/theNCI/status/910998344113192960>
- Nano gold: <http://mtv.com.lb/News/742406>
- Executioner Protein: <https://www.labroots.com/trending/drug-discovery/7071/drug-revives-executioner-protein-kill-cancer-cells>
- CPP-1X/sul: <http://www.kgun9.com/news/local-news/drug-developed-in-tucson-could-stop-cancer>
- Suicide Molecules: <http://ecancer.org/news/12614-suicide-molecules-kill-any-cancer-cell.php>
- Sipuleucel <https://www.oncolink.org/cancer-treatment/chemotherapy/oncolink-rx/sipuleucel-t-provenge-r>

Last Chances (3)

- Newer Immunotherapies: <https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy/whats-new-in-immunotherapy-research.html>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4042089/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5484157/>
- CAR-T Cells: <https://jhoonline.biomedcentral.com/articles/10.1186/s13045-017-0444-9>
<https://www.cancer.gov/about-cancer/treatment/research/car-t-cells>
<https://ovariancancernewstoday.com/2017/07/05/cancer-car-t-cell-therapy-by-celyad-shows-promising-early-results-during-first-dose-level-of-think-clinical-trial/>
- Vitamin C and Vitamin K <http://chipsahospital.org/1001-the-cancer-killing-ratio-how-this-combination-of-vitamin-c-and-k3-is-changing-the-way-we-fight-cancer/>
- 31 day Cure? <https://www.amazon.com/31-Day-Home-Cancer-Cure/dp/1450799736>
- CAR T-Cell: <https://clinicaltrials.gov/ct2/show/NCT02617134> <http://www.esmo.org/Oncology-News/Evolving-Field-of-CAR-T-Cell-Therapy>
- Budwig Protocol: <https://draxe.com/budwig-diet-protocol-cancer/>
- Vallovox: <http://chipsahospital.org/fda-approves-vallovox-for-clinical-investigation-but-its-available-at-chipsa-now/> <https://immuno-oncologynews.com/2017/11/08/batu-biologics-vallovox-fda-immunotherapy-cancer-tumors-clinical-investigation/> <https://translational-medicine.biomedcentral.com/articles/10.1186/s12967-016-0842-8>

Last Chances (4)

- **Inhibit Ubiquitin:** <http://www.cancertherapyadvisor.com/general-oncology/ubiquitin-tumor-cancer-proteins-inhibition-treatment-drugs/article/712150/>
- **Ulixertinib:** https://www.webmd.com/cancer/news/20171215/new-cancer-drug-shows-promise-against-many-tumors?ecd=wnl_can_122617&ctr=wnl-can-122617_nsl-promo-v_3&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d#1 helps all types of solid tumors
- **Mvasi (bevacizumab-awwb)** biosimilar to avastin <https://cancercompass.com/cancer-news/article/59361.htm>
- **Immune Injection of two agents:** <https://www.sfgate.com/bayarea/article/Cancer-breakthrough-97-percent-of-mice-cured-in-12547552.php>
- **Dendritic Cells:** <https://www.labroots.com/trending/immunology/7890/enhancing-dendritic-cells-fight-cancer>
- **HET0016:** fight bone cancer <https://www.labroots.com/trending/cancer/7893/blocking-cancer-s-ability-speak-bone-marrow-cells>
- **mXELIRI:** <http://www.targetedonc.com/publications/targeted-therapy-news/2018/January-2018/secondline-chemotherapy-doublet-proves-noninferior-to-folfiri-in-mcrc>

Last Chances (5)

- **Broccoli & Yogurt!** <https://www.express.co.uk/life-style/health/903433/Bowel-cancer-symptoms-cure-Broccoli-yoghurt>
- **GPX4 Blockers:** <https://medicalxpress.com/news/2017-11-diverse-drug-resistant-cancer-cells-hidden.html>
- **Immune Stimulating Agents:** <https://www.labroots.com/trending/cell-and-molecular-biology/8133/tumors-eradicated-immune-stimulating-agents>
- **Rare Immune Cells ILC2 :**
<https://www.labroots.com/trending/immunology/8142/rare-immune-cells-prevent-cancer-spreading>
- **Checkpoint Kinase inhibitors:** <https://www.cancertherapyadvisor.com/general-oncology/solid-cancer-novel-checkpoint-inhibitor-chemotherapy-improved-response/article/746757/>
- Vitamin C and K3 in 100:1 ratio : <https://chipsahospital.org/1001-the-cancer-killing-ratio-how-this-combination-of-vitamin-c-and-k3-is-changing-the-way-we-fight-cancer/>

Last Chances (6)

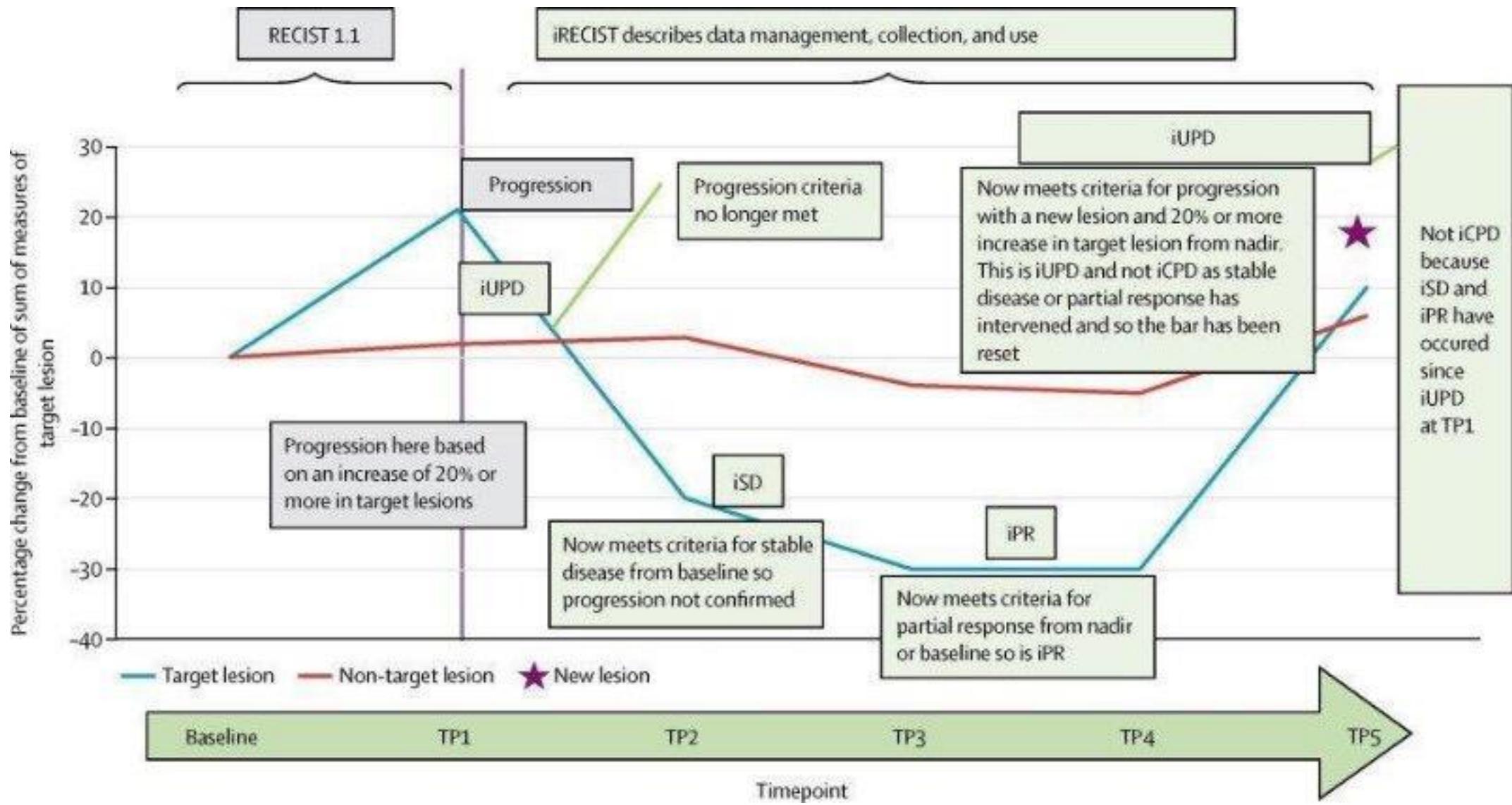
- **ARS-1620 KRAS Inhibitor:** <https://directorsblog.nih.gov/2018/02/13/kras-targeted-cancer-strategy-shows-early-promise/> for G12C mutations (we have G12D)
- **G100:** <http://www.issels.com/blog/2017/05/16/could-this-bacterial-molecule-stimulate-the-immune-system-to-fight-cancer/>
- **iPSC Vaccines:** <https://www.thealternativedaily.com/3-alternative-cancer-treatments-to-ask-your-doctor-about/>
- **Carbon Ion Radiotherapy (CIRT):** <https://www.labroots.com/trending/cancer/8431/carbon-ion-radiotherapy-promising-treatment-radiation-resistant-cancers>
- **DNA Origami:** <https://www.labroots.com/trending/cancer/8285/dna-based-nanorobot-search-destroy-cancer>
- **Colorectal vaccine:** MD Anderson
<https://twitter.com/MDAndersonNews/status/972838806222180353?t=1&cn=ZmxleGlibGVfcmlVjcw%3D%3D&refsrc=email&iid=d1b08e1767f8452aa99e939212c599bc&fl=4&uid=54455276&nid=244+285282304> <https://www.mdanderson.org/publications/annual-report/annual-report-2017/customized-vaccines-deliver-extremely-personalized-therapy.html> 1-877-632-6789
<https://www.youtube.com/watch?v=4DBrxcyo2F8&feature=youtu.be>
- **Cancer Vaccine:** <https://cancercompass.com/cancer-news/article/60633.htm>

Last Chances (7)

- Retinoic Acid :
<https://www.labroots.com/trending/cancer/8619/synthetic-retinoid-promise-inhibition-cancer-cells>
- **CAR T-Cell Therapy:**
<https://www.labroots.com/trending/cancer/8617/car-t-cell-101>
- Dendritic Vaccines:
<http://www.issels.com/blog/2018/03/21/personalized-dendritic-cell-vaccines-as-effective-immunotherapy-make-the-news/>
- BITE Trials & CEA-TCB <https://www.roche.com/investors/updates/inv-update-2017-05-18.htm>

A word on Trials

- Why the hell would you do a randomized trial with placebos when:
 - Millions of patients are already on standard of care, representing the “placebo” arm if you only collected that data
 - Falling into the Placebo arm gives false hopes (story of two cousins, one of whom died on placebo, while second lived on the right treatment)
- A 12 year cycle for drug approval is unacceptable for a deadly disease – the current “standard of care” medicines were approved in 2008!
- Who is trialing cheap, safe repurposed drugs, supplements & herbs? Pharmaceuticals have no incentive! Where are my tax dollars to do this?



Trial & Support Sites

- <http://www.cancertrialshelp.org/cancer-trial-search/>
- <http://www.cancersupportcommunity.org/learn-about-cancer-topics/cancer-clinical-trials>
- <https://platform.emergingmed.com/find-clinical-trials/cri#partnerhome>
- <https://www.ccalliance.org/datablue1>
- <http://www.emergingmed.com/partners/FCRC/>
- <https://clinicaltrials.gov/>
- **Belong** cancer app – Keren & Naama can help find tailored trials (plus many cancer apps – Cancer News a good one to keep up with the latest)
- <https://patient.cureforward.com/> - assigns an actual guide to help you
- <http://www.abedia.com/wiley/>
- <http://newccboard.colonclub.com/index.php>
- https://www.statnews.com/2017/05/17/cancer-clinical-trials-curation/?s_campaign=fb
- **New: “Right to Try” Law passed to use new medicines!!**

Side Effects

- **Topical Menthol Cream** helps **neuropathy** pain <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/view?cdrid=749658&version=HealthProfessional&protocolsearchid=6252091>
- **Ginkgo Biloba, Celery juice & Glutathione** reduce **neuropathy**
- **Probiotics** help **nausea and diarrhea**
- **Euceria cream** helps **hand & foot syndrome**, and **radiation burns**
- **Mederma** helps **scars** heal better
- **Imodium** helps **Diarrhea** ; **Senna** helps soften stool; **Aquaphor** eases **Diarrhea** on skin; **PediaLyte, BRAT diet** helps <https://www.oncolink.org/support/nutrition-and-cancer/during-and-after-treatment/low-fiber-diet-for-diarrhea>
- **Pain killers** – Dr prescription, but **Tylenol** gets you started
- **Neuropathy: Cold caps & gloves** <https://m.medicalxpress.com/news/2017-10-cold-therapy-effective-cancer-treatment.html>
- **Exercise** helps everything, including Neuropathy! <https://link.springer.com/article/10.1007/s00520-017-4013-0>
- **Dermatitis:** <http://www.cancernetwork.com/oncology-journal/radiation-dermatitis-recognition-prevention-and-management>

Notes

- Oxaliplatin active on cells without miR-625 (a micromolecule), much less if not
- If PIK3CA mutation, starve it from Glutamine
- Oxygen in lungs inhibits chemo
- Colonoscopy best diagnosis tool? Sigmoscopy works for rectal. Septin-9 and other assays are good.
<http://www.cancertherapyadvisor.com/gastrointestinal-cancers/colorectal-cancer-crc-screening-septin-9-assay-use-treatment/article/719043/>

Our Story

- Stage 4 Rectal Cancer with metastasis to Liver & Lungs, Aug/Sept 2016
- Started with Chemo:
 - Folfox (5FU, Leucovorin, Oxaliplatin)
 - Avastin
- Good Response to Chemo:
 - ~50% shrinkage in 4 cycles (2 weeks each)
 - Stable scan after next two cycles
 - After 10 cycles, **Lungs Clear!**
 - CEA dropped from 167 to 3.2 – good prognostic <http://www.cancernetwork.com/oncology-journal/cea-monitoring-colorectal-cancer>
- Liver Resection Feb 7, 2017 (after Portal Vein embolization Jan 9, 2017)
 - Surgery successful (8 hrs) with some followup complications: hepatic vein thrombosis; Ileus.
 - Pathology shows **Complete response!** Great prognosis
 - HAI pump planned but not installed due to complex operation
<http://onlinelibrary.wiley.com/doi/10.1002/jso.24189/full>

Our Story (2)

- Next steps:
 - Adjuvant Chemo (5FU, LV, with Oxaliplatin if Sammy can handle)
 - Long course Radiation therapy to Rectum (with enhancing chemo) ; LC better for complete response <http://ascopubs.org/doi/full/10.1200/jco.2012.42.9597>
https://academic.oup.com/annonc/article/25/suppl_4/iv199/2241361/581PNEOADJUVANT-TREATMENT-OF-RECTAL-CANCER-SHORT
 - **Wait & see approach** hoping to avoid rectal surgery and temporary colostomy thanks to Dr Aguilar
<http://www.cancernetwork.com/oncology-journal/watch-and-wait-approach-rectal-cancer-are-outcomes-improved-more-limited-t-stage-and-routine-use>
<https://www.ncbi.nlm.nih.gov/pubmed/24022527>
<https://www.ncbi.nlm.nih.gov/m/pubmed/21494121/> <https://www.mskcc.org/clinical-updates/toward-curing-rectal-without-surgery>
- KRAS mutation does not affect prognosis (?)
<https://www.mdanderson.org/publications/oncolog/july-2017/ras-mutations-and-colorectal-cancer-liver-metastases.html>) (but reduces chemo options – no Erbitux or Vectibix) <http://bmccancer.biomedcentral.com/articles/10.1186/s12885-016-2141-4>
- Lung & Liver resection better than just liver! Not quite the scare the Lung surgeon had made it to be. <https://www.ncbi.nlm.nih.gov/pubmed/21700179>

Our Story (3)

- **Complete response** raises 5 yr survival from 50% to near 80% - **hope is awakened!**
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2731036/>
[https://www.researchgate.net/profile/Michael_Overman/publication/23399769_Pathologic Response to Preoperative Chemotherapy A New Outcome End Point After Resection of Hepatic Colorectal Metastases/links/56b091c808ae9ea7c3b08230.pdf](https://www.researchgate.net/profile/Michael_Overman/publication/23399769_Pathologic_Response_to_Preoperative_Chemotherapy_A_New_Outcome_End_Point_After_Resection_of_Hepatic_Colorectal_Metastases/links/56b091c808ae9ea7c3b08230.pdf)
[https://www.researchgate.net/profile/Eric Vibert/publication/23673366 Long-Term Results of Two-Stage Hepatectomy for Irresectable Colorectal Cancer Liver Metastases/links/0deec523edac20b7fd000000.pdf#page=145](https://www.researchgate.net/profile/Eric_Vibert/publication/23673366_Long-Term_Results_of_Two-Stage_Hepatectomy_for_Irresectable_Colorectal_Cancer_Liver_Metastases/links/0deec523edac20b7fd000000.pdf#page=145)
- **Chemoradiation** to Rectum: starts with the usual total confusion at MSK – sent to York Ave instead of Basking ridge; need to reschedule another “intro” in BSK; referred to a Westchester Dr!; trying not to lose time again and affecting chemo effectiveness with a long gap. Again, manage your own case and do not trust the system. The Dr we met thought we were there for Liver scan! Ultimately, they are good at the technology and what they do, but are terribly organized and have no hand-over/ quarterbacking skills.

Complete Response!

- <https://www.ncbi.nlm.nih.gov/m/pubmed/20405223/?i=2&from=/17060484/related> generally all metastasis respond similarly; neoadjuvant chemo and consolidation chemo after CRT help improve pCR rates <https://www.ncbi.nlm.nih.gov/m/pubmed/18936472/> <https://www.ncbi.nlm.nih.gov/m/pubmed/16317549/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4650974/> Aguilar
- <https://www.ncbi.nlm.nih.gov/m/pubmed/24002765/?i=3&from=/20405223/related> the bad news of nodal involvement ameliorated by chemotherapy
- <https://www.ncbi.nlm.nih.gov/m/pubmed/18439246/> recurrence becomes later, less likely; adjuvant chemo not necessary? <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4957736/#!po=0.561798>
- For rectum, avoid surgery with similar/better results!
<http://www.medpagetoday.com/meetingcoverage/mgics/49504>
<https://www.ncbi.nlm.nih.gov/m/pubmed/23154394/>
<https://www.ncbi.nlm.nih.gov/m/pubmed/22067400/>
<https://www.ncbi.nlm.nih.gov/m/pubmed/15383798/>
- Much better Survival Stats: <https://www.ncbi.nlm.nih.gov/m/pubmed/20692872/>
<https://www.hindawi.com/journals/grp/2014/867841/>
https://www.researchgate.net/profile/Michael_Overman/publication/23399769_Pathologic_Response_to_Preoperative_Chemotherapy_A_New_Outcome_End_Point_After_Resection_of_Hepatic_Colorectal_Metastases/links/56b091c808ae9ea7c3b08230.pdf
<https://academic.oup.com/annonc/article/18/2/299/250726/Importance-of-histological-tumor-response>
https://www.researchgate.net/publication/230655656_Pathologic_response_to_bevacizumab-containing_chemotherapy_in_patients_with_colorectal_liver_metastases_and_its_correlation_with_survival

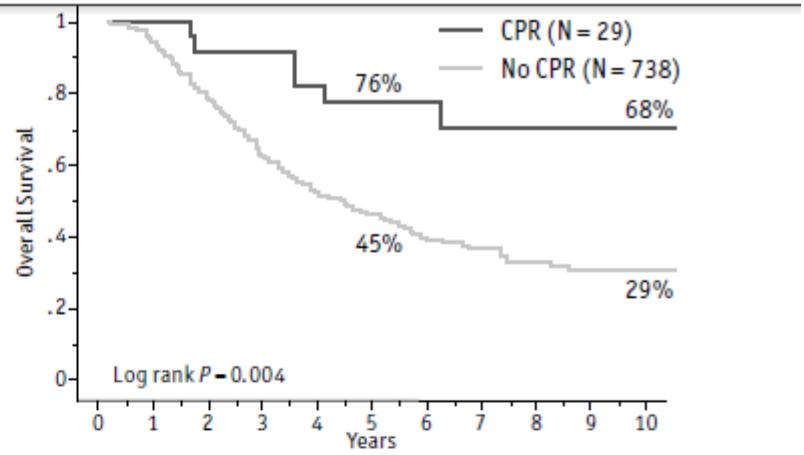


Figure 1.

Overall survival curves (Kaplan-Meier) of patients with and without complete pathologic response (CPR).

Patients at risk	Total	1 yr	3 yrs	5 yrs	6 yrs	8 yrs	10 yrs
CPR	29	25	19	11	11	8	5
No CPR	738	545	222	104	71	36	20

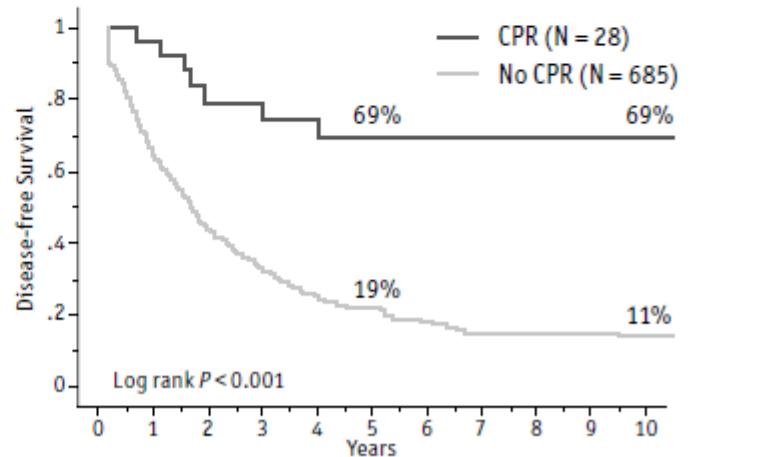
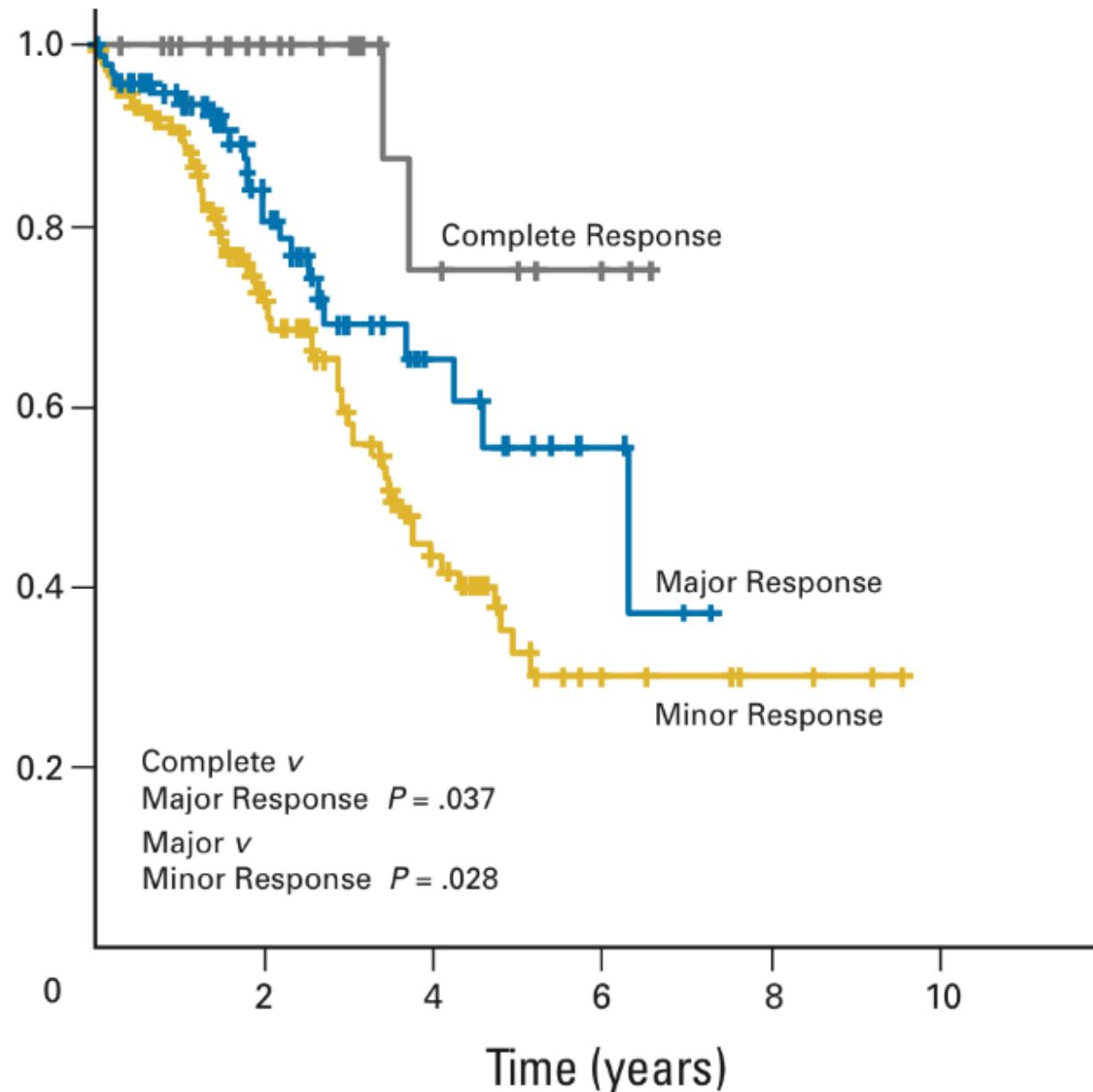


Figure 2.

Disease-free survival curves (Kaplan-Meier) of patients with and without complete pathologic response (CPR).

Patients at risk	Total	1 yr	3 yrs	5 yrs	6 yrs	8 yrs	10 yrs
CPR	28	23	15	9	9	8	5



2. Overall survival curves by the degree of pathological response.

pCR

- Good news: 70% survive 10 yrs; 70% also DFS 10 year. So **recurrence** (normally 90%) **drops to 30%**.
[https://www.researchgate.net/profile/Eric Vibert/publication/23673366 Long-Term Results of Two-Stage Hepatectomy for Irresectable Colorectal Cancer Liver Metastases/](https://www.researchgate.net/profile/Eric_Vibert/publication/23673366_Long-Term_Results_of_Two-Stage_Hepatectomy_for_Irresectable_Colorectal_Cancer_Liver_Metastases/)
- Also looks like **if you make it to 5 yrs you are cured**. Maybe longer for Rectal, but good.
- Within the stats, looks like liver-only metastasis have an un-intuitive lower 5 yr survival (66% vs 76%), as opposed to those with Liver and Lungs (like we do)! This jives with Anderson's results for liver and lungs vs Liver only. So **our stats should be better than the 5 yr 76% and 10 yr 70%**!
- **And God-willing, our Diet, Exercise and Supplement plan will make for 100%**!

Pitfalls

- Very slow, clumsy Genetic testing (paperwork missed, several times)
 - Didn't affect result, since it turned out we had KRAS mutation and Avastin was the right choice anyway
- Missed MSI results (left hanging in the test lab- neither GI specialist nor MSKCC asked for them!!)
 - Didn't affect result – since we were MSS stable, and Keytruda wouldn't have helped us
- But it could have been different, and we could have missed some great opportunities
- Unnecessary scares:
 - Bleeding scare after liver surgery turned out to be Ileus (old food stuck in stomach)– already in a scan report three days earlier nobody read!
 - Early Heparin infusion could have avoided hepatic vein thrombosis – some reports recommended it, but wasn't used. Now have to take Enoxaparin (Lovenox) shots twice a day for six months!

↳ hTERT Immunotherapy NCT02960594 (10)

↳ **Sam S. Abujawdeh** Colleen, I left a message today regarding my son Sammy Abujawdeh who is interested in the hTERT trial. I am attaching a copy of his MRI scan. I would appreciate your help in determining if he is eligible. Thank you.

Jan 30 at 9:37 PM

[8 more messages](#)

↳ **Redlinger, Colleen** <Colleen.Redlinger@uphs.upenn.edu>

Mar 22 at 8:05 AM

To Sam S. Abujawdeh

Hi Sam,

Unfortunately if the primary tumor in the rectum is not surgically removed he would not be eligible. The trial is specific about having tumors surgically resected. Please let me know if there is any other questions I can answer.

Regards,
Colleen

Colleen Redlinger

Pancreatic Cancer Research Center

Abramson Cancer Center

Phone: 215-220-9693

Email: colleen.redlinger@uphs.upenn.edu

Advisors & Friends

- Dr Nelly Adel (MSK); thru Joe AJ
- Dr Rabih Said (Lebanon/MD Anderson), Ghada's friend; Also Ghassan Abu-Alfa (MSK) liver surgeon
- Dr Nassim Nabbout (Wichita/MD Anderson), Dory AJ's friend
- Dr Wael Harb (Indiana; Oncolytic Virus Therapy); Dr Salim Aboujaoude's friend
- Dr Joe Serghany & Frank Mascaro (Buffalo) – thru Roger & Kamal
- Joe & Liz Chebli (Bristol Meyer Squibb) – Church
- Dr Michael Hanna (Vaccinogen), thru Dr Bishara Helou and Edward AJ
- Dr Gary Schwartz (Chief Oncology Presbyterian/Columbia) thru Takla AJ; also Dr Naiyer Rizvi (Immunotherapy Presbyterian/Columbia)
- Dr David Sahar – generalist; thru Elie Cherbaka
- Dr Dany Aboujaoude (Falougha)
- Dr Maroun Aboujaoude – Liver Surgeon, Lebanon
- Dr Musaddeq Hussain (Merck); thru Wasif Sattar
- Dr Fouad Hajjar (Orlando), via Khalil; Dr Omar Khayaleh (Orlando) also thru Andrew AJ
- Bernard & Jean-Paul Hachem (Nutrition Advice) – Elie Hachem's brothers
- Dr Joseph Eid (Merck VP Oncology) – thru Carlo Eid
- Cathy Stavropoulos (Stage 4 CRC survivor) – thru Joe AJ
- Dale McGee – Surgeon General for Massachusetts
- Belong Team: Keren; Naama...

Doctors and Practitioners

- Dr Armin Shahrokni - Oncologist MSKCC; Nurse Debbie, secretary Tommy; Basking Ridge Oncologist Dr Chalassani
- Dr Michael D'Angelica – MSK Liver Surgeon, Nurse Jennie Smith
- Dr Bernard Park – MSK Lung Surgeon; Nurse Sherry Suozzo
- Dr Julio Garcia Aguilar – MSK Rectal Surgeon
- Erin Kenny – MSK Nutritionist
- Dr Shelly-Latte Naor – MSK Integrated Medicine
- Dr Aaron Miller – Overlook Hospital Rectal Surgeon
- Lynn Brody – MSK Interventional Radiology (RF Ablation, PVE)
- Dr Karen Barofsky – MSK Radiation, BR; Dr Christopher Crane NYC
- Dr Andrew Coronado – GI specialist
- Woodbridge MRI – JFK MRI

The Power of Prayers

- The prayers of Many helped us stay strong
- Roy Singer & his wife in Holland prayed and lit a candle that wouldn't wave in the wind
- Lilly Haroun mustered the Father Yaacoub community, 3000 strong, to pray on Sammy's behalf for a Miracle
- Hugo Bonucelli enlisted the Opus Dei community for prayer
- But more importantly, individuals , relatives and friends, prayed and cared daily. Ghassan & Coco sent us relics of St Rita; people sent symbols from Lebanon, of St Charbel and Lebanese saints. They came to visit from Holland, Kuwait, France, California, and all over. They visited shrines all over to leave mementos for Sammy – Jaoude left a note in the Wailing Wall in Jerusalem.
- The power of Love, Faith, Family and community was a key player in our fight

Daily Routine post-NED to prevent Recurrence

- **Daily exercise:** 30-60 minutes treadmill, walk, weights
- **Full set of Supplements** used during treatment
- **Diet:** steady diligence on good food and cancer killers
 - **Daily Greens & Vegetables:** Salad daily – the magic packages of Pommegranate, Kale salads, etc;
 - **Daily Fruits** – Papaya, oranges; dark grapes; berries;
 - **Daily Juices:** Beet Root; Pommegranate; Soursop; Blue & Green Machines; plus citrus green tea, lemonade
 - **Daily Cancer Killers:** one of following – Purple Potatoes; Sweet potatoes; Falafel (chichpeas; beans); Kishk (fermented wheatgerm); Asparagus & Broccoli; Thyme (Zaatar)
 - The rest should be **miscellaneous GOOD stuff** (no sugars, no red meats, low fat)
- **Three legs of the No-recurrence Stool**
- Keep looking for **recurrence trials**

CEA False Positives?

- Our CEA readings jumped to 7 then 17.8 then 23 during radiation; small hypodensity showed in Liver adjacent to IVC. Is it false positive? Liver was clear on MRI retest; PETscan showed no evidence of disease (Petscan not accurate below 1 cm)
<https://csn.cancer.org/node/248161>.
- <http://onlinelibrary.wiley.com/store/10.3322/caac.21247/asset/caac21247.pdf;jsessionid=67A74C8AA05B41D589B6E8E60CE4EF71.f01t01?v=1&t=j30nacv0&s=0a1e4aa558bb57f1857b5d7ad55bf1b7d4c2baaf> false positives happen, mostly no more than 15. Flares may even be a good sign <http://www.ascopost.com/issues/august-15-2014/high-false-positive-rate-of-elevated-cea-seen-in-patients-with-resected-colorectal-cancer/> <http://academic.oup.com/annonc/article/21/5/1013/236669/The-impact-of-carcinoembryonic-antigen-flare-in> <https://csn.cancer.org/node/262501>
- The continuing rise in CEA (32, 6 weeks after radiation) may signal a recurrence on the way? Good news?: our doubling time, about 40 days, is a good prognosis factor (>30).
<http://clinchem.aaccjnls.org/content/45/10/1695.full>
<https://academic.oup.com/jco/article/32/2/41/997783/CEA-Doubling-Time-and-CEA-Half-life-in-the> http://www.cochrane.org/CD011134/COLOCA_detecting-recurrent-colorectal-cancer-testing-blood-carcino-embryonic-antigen-cea
<http://www.nature.com/articles/srep34131>

Clinical Complete Response? - Rectum

- Rectum tumor gone (minor scar left) ; Dr Aguilar decided on Non-Operative management
<https://link.springer.com/article/10.1007%2Fs00384-016-2709-0>
- Concerned about rising CEA still, Aguilar asked Shahrokni (the Oncologist) to do MRI to see why CEA is rising- he didn't and didn't tell us either. We finally asked for MRI ourselves. He only admitted after later MRI found the cause in rectum.
- Turns out response was not complete pathological response! We need an operation.
- 3 months spent scared, where the “recurrence” was! Could be Peritoneum/omentum, bone or Brain (bad news)? <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/colorectal-cancer-peritoneal-carcinomatosis-treatment-options/article/408012/>
<http://onlinelibrary.wiley.com/doi/10.3322/caac.21277/full>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3819534/> <https://www.oncolink.org/cancers/bone/bone-metastases/all-about-bone-metastases> <http://www.mayoclinic.org/diseases-conditions/bone-metastasis/basics/definition/con-20035450>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4783735/#!po=72.7723> <http://www.current-oncology.com/index.php/oncology/article/view/1048/1027>
<https://bmccancer.biomedcentral.com/articles/10.1186/s12885-016-2290-5>
<https://www.ncbi.nlm.nih.gov/pubmed/19194739>
<https://academic.oup.com/annonc/article/23/8/2072/135490/Natural-history-of-bone-metastasis-in-colorectal> <http://www.hipec.com/peritoneal-cancer/> <http://www.hipec.com/hipec/>

Rectal Surgery

- Optimal timing 8 weeks after chemoradiation- we are at 4 months. But apparently doesn't affect long term survival too much. <https://www.ncbi.nlm.nih.gov/m/pubmed/24263329/?i=2&from=/23739201/related>
<https://www.ncbi.nlm.nih.gov/m/pubmed/27190505/?i=5&from=/26206642/related>
<https://www.ncbi.nlm.nih.gov/m/pubmed/23739201/?i=5&from=/27190505/related>
<https://www.ncbi.nlm.nih.gov/m/pubmed/26206642/?i=2&from=/26897480/related>
<https://www.ncbi.nlm.nih.gov/m/pubmed/26897480/>
- TME, Ileostomy needed (temporary) , for about 2 months <https://www.mskcc.org/clinical-updates/minimally-invasive-laparoscopic-and-robotic-surgery-rectal>
https://en.m.wikipedia.org/wiki/Lower_anterior_resection
- Adjuvant therapy may not be needed except in high risk group – we'll go for it
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4675908/>
<http://ascopubs.org/doi/full/10.1200/jco.2015.60.8554>
- Irinotecan no good for adjuvant; best is Folfox or just Capecitabine
<https://www.ncbi.nlm.nih.gov/m/pubmed/23063351/?i=6&from=/24263329/related>
- Eligible for hTert trial again! <https://clinicaltrials.gov/ct2/show/NCT02960594> Also Dr Harb has an incoming trial for high risk recurrence.
- But are we sure? With a bone mets present, focused restricted diffusion could be anything (scar, etc)- Dr Aguilar is rethinking this. <http://mriquestions.com/dwi-bright-causes.html>
- Biopsy came negative; we may still have complete response in Rectum!! No- Biopsy on 10-2-2017 came positive.

Rectal Surgery (2)

- Ileostomy needed. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4805730/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4273155/>
[https://www.researchgate.net/post/Do you think that a defunctioning stoma is still necessary in elective rectal surgery](https://www.researchgate.net/post/Do_you_think_that_a_defunctioning_stoma_is_still_necessary_in_elective_rectal_surgery)
- How About Brachytherapy? Radiation, Physics checking. Only covers small tumors (5 mm!) <https://www.ncbi.nlm.nih.gov/pubmed/17884396/>
<https://www.themednet.org/would-you-recommend-repeat-radiation-therapy-for-a-painful-perineal-recurrence-in-a-patient-who-failed-definitive-crt-and-recurred-again-after-salvage-abdominoperineal-resection-apr>
<http://onlinelibrary.wiley.com/doi/10.1111/j.1463-1318.2010.02322.x/abstract>
<https://www.omicsonline.org/open-access/a-comparison-of-posttreatment-quality-of-life-outcomes-for-endoluminal-brachytherapy-and-chemoradiation-for-the-treatment-of-localized-rectal-cancer-2471-2671-1000112.php?aid=72064&view=mobile>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5059076/>
<https://www.hindawi.com/journals/grp/2011/917941/>

Bone Mets

- With our bad luck, we have bone mets in the right arm (**Humerus** - between elbow and shoulder); rare occurrence (6%) overall, but not so rare if you already have liver and lung mets! Bone scan showed it in August, but it was already visible (and ignored) by the radiologists in the Petscans of June and August!!! **Malpractice!!!** <https://www.oncolink.org/cancers/bone/bone-metastases/all-about-bone-metastases> <https://www.cancer.net/cancer-types/bone-cancer/view-all>
- Also **high ALK/ALP levels** were a clue I used to prod Onc for bone scan.
<http://www.livestrong.com/article/298946-elevated-alkaline-phosphatase-cancer/>
- Treatment includes radiation and surgery; bad prognosis, but not sure if because of other cancer stage associated or from bone mets itself
<http://www.sciedupress.com/journal/index.php/jst/article/download/3486/2218>
<https://cdn.intechopen.com/pdfs-wm/21495.pdf>
<http://www.webmd.com/cancer/features/bone-metastasis-what-happens#1>
<http://ispub.com/IJO/8/2/14324>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3163260/#!po=35.4167>
http://www.webmd.com/cancer/ss/slideshow-bone-cancer-guide?ecd=wnl_spr_081817&ctr=wnl-spr-081817_nsl-Id-stry_1&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d
<http://emedicine.medscape.com/article/1253331-overview#a7>
http://www.cancerindex.org/bone_mets.htm <http://www.mayoclinic.org/diseases-conditions/bone-metastasis/basics/treatment/con-20035450>
<https://www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer/treating-bone-metastases.html>

Bone Mets (2)

- **Biophosphonates** help bones (**and fight cancer!**) – Fosamax (Alendronate); questionable CRC effect? (side effect- jaw damage!) we're leaning against using it (at least until Sammy does his teeth, which is what triggers Jaw necrosis) <http://www.practiceupdate.com/content/no-impact-of-bisphosphonates-on-colorectal-cancer-risk/478> <https://www.drugs.com/drug-class/bisphosphonates.html> <http://www.healthline.com/health-news/can-osteoporosis-prevent-breast-colon-and-lung-cancers-120414#6> <http://ascopubs.org/doi/full/10.1200/jco.2010.33.7485> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5345000/#!po=23.6486> <https://mobile.nytimes.com/blogs/well/2012/05/09/new-cautions-about-long-term-use-of-bone-drugs/?referer=https://www.nof.org/patients/treatment/medicationadherence/side-effects-of-bisphosphonates-alendronate-ibandronate-risedronate-and-zoledronic-acid/> <http://www.sciencedirect.com/science/article/pii/S1542356512014267> <https://coloncancernewstoday.com/2014/12/09/study-finds-osteoporosis-drugs-prevent-colon-cancer-progression/> Really rare OJN <https://academic.oup.com/jcem/article/95/4/1555/2596477/Long-Term-Use-of-Bisphosphonates-in-Osteoporosis> <http://www.dentistryiq.com/articles/rdh/2006/08/dental-side-effects-of-bisphosphonates.html> <https://academic.oup.com/annonc/article/23/5/1341/193687>
- **CRC effect:** Israel study says helps reduce 59% <http://www.patientcareonline.com/bone-metastases/new-study-shows-taking-oral-bisphosphonates-reduces-colorectal-cancer-risk>
- **oral bisphosphonates** may not cause much **Jaw necrosis?** <http://www.cancer.ca/en/cancer-information/diagnosis-and-treatment/chemotherapy-and-other-drug-therapies/bisphosphonates/potential-side-effects/?region=on>
- https://www.webmd.com/cancer/ss/slideshow-cancer-bone-metastasis?ecd=wnl_can_120517&ctr=wnl-can-120517_nsl-ld-stry_1&mb=aVns%2fYmgyaFy5dddvrMRDxXFE73IOX1cW5RS2caStIA%3d

Bone Mets (3)

- **Radiation** is the treatment (also surgery or RFA); <https://www.mskcc.org/blog/why-am-i-hearing-so-much-about-cyberknife> <https://www.mskcc.org/cancer-care/diagnosis-treatment/cancer-treatments/radiation-therapy> <http://www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/radiotherapy/symptoms/bone-pain> <http://www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/radiotherapy/follow-up/long-term-side-effects> <https://www.uwhealth.org/healthfacts/cancer/4622.pdf>
- Good chance after resection if **single Metastasis** (our case)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3163260/>
<https://link.springer.com/article/10.1007%2Fs00384-017-2780-1>
- **Mirel scale** used to judge whether to do surgery. We were about 8-10, tipping point: 8. **If it had been detected earlier (as possible in our June and maybe earlier scans), radiation alone might have sufficed!!** Cancer had started eating at the bone when we found it. <https://radiopaedia.org/articles/pathological-fracture-risk-mirel-classification-1> <http://www.orthobullets.com/pathology/8002/impending-fracture-and-prophylactic-fixation> https://en.m.wikipedia.org/wiki/Mirel%27s_score
- After surgery: **time to normal CEA predictive of survival:** <https://www.nature.com/articles/srep34131>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2749169/#!po=26.5152>
<https://academic.oup.com/jco/article/32/2/41/997783/CEA-Doubling-Time-and-CEA-Half-life-in-the>
https://www.ncbi.nlm.nih.gov/core/lw/2.0/html/tileshop_pmc/tileshop_pmc_inline.html?title=Click%20on%20image%20to%20zoom&p=PMC3&id=2749169_10434_2009_651_Fig1_HTML.jpg; 5 days half life;
Ours???? Our measurements were messed up by a new bone met in spine while arm cea was dropping

Bone Mets (4)

- **CEA Half-life after surgery:** our half life (90 to 20 drop in 16 days) is about **7.3 days**. Mixed info on relevance (supposedly, around 4 is good news, no recurrence; around 8 is recurrence...)

<https://www.researchgate.net/publication/11418881> Usefulness of analytical CEA doubling time and half-life time for overlooked synchronous metastases in colorectal carcinoma

<https://www.ncbi.nlm.nih.gov/m/pubmed/18570735/>

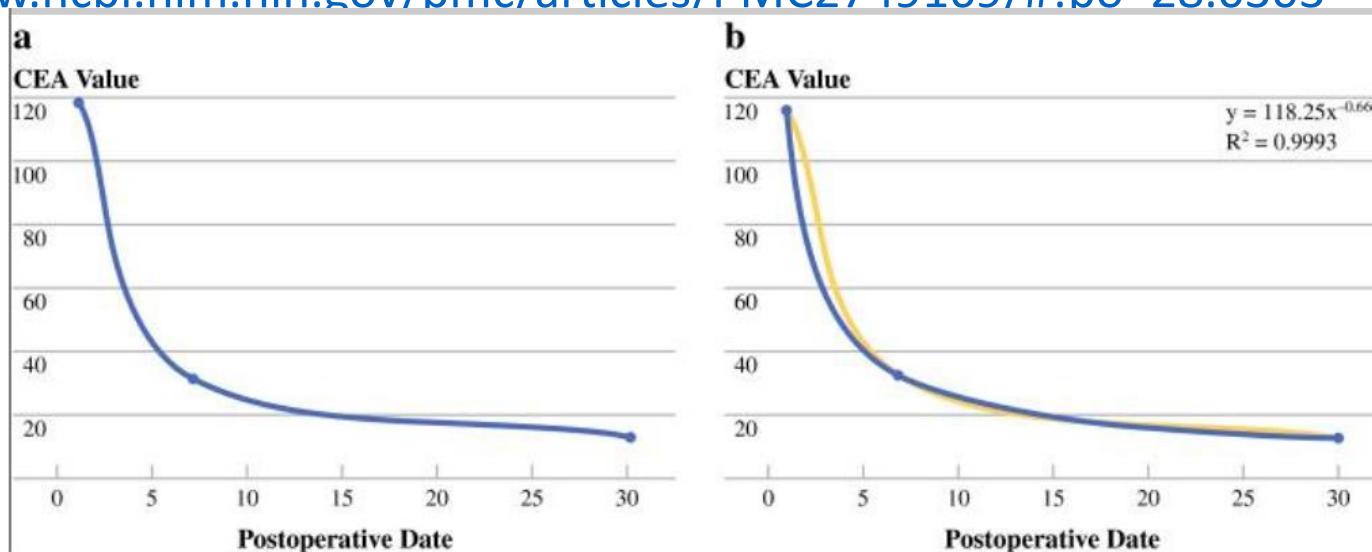
<http://www.clinlabnavigator.com/carcinoembryonic-antigen-cea.html>

<https://academic.oup.com/jjco/article/32/2/41/997783/CEA-Doubling-Time-and-CEA-Half-life-in-the> below is a supposed good scenario, similar to ours

<http://europepmc.org/articles/PMC2749169/figure/Fig1/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2749169/#!po=28.0303>

<http://euc>



Bone Mets (5)

- Second two weeks only dropped from 20 to 13! Problem?? Hard to tell, since cea half life seems to differ by location? Also see curve on previous page, a “good” scenario, where drop flattens out.
Lungs 1 ½ days <https://www.minervamedica.it/en/journals/minerva-pneumologica/article.php?cod=R16Y1999N02A0051>
<https://www.ncbi.nlm.nih.gov/m/pubmed/10399629/> or sharp 4 days then 11 day half life
<http://erj.ersjournals.com/content/4/3/374>
<https://pdfs.semanticscholar.org/b09d/b46329dfabb614e8ffbed98ff67816eb36fa.pdf> ; cea guidelines say 4.5 days otherwise metastasis <http://www.curingken.com/documents/report-10.pdf> <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.495.1762&rep=rep1&type=pdf>
<http://www.acb.org.uk/Nat%20Lab%20Med%20Hbk/CEA.pdf>
<http://www.cancernetwork.com/oncology-journal/cea-monitoring-colorectal-cancer> ; liver : 4-20 days <http://jamanetwork.com/journals/jamasurgery/fullarticle/402292>
<http://ar.iiarjournals.org/content/34/10/5529.full.pdf> ; RFA : sharp drop first week then up to 3 month <http://onlinelibrary.wiley.com/doi/10.1002/cncr.21959/full> - better than a rise I guess
<https://www.researchgate.net/publication/6262896> A small rise in CEA is sensitive for recurrence after surgery for colorectal cancer besides there seems to be several types and mutations of cea <http://cancerres.aacrjournals.org/content/61/7/2822>
<http://www.physicianspractice.com/laparoscopy/carcinoembryonic-antigen-cea-cervical-neoplasia-review>

Bone Mets (6)

- Also doing **brain scan (MRI)** just in case to cover all bases. Brain scan clear – some good news for a change!
<https://www.radiologyinfo.org/en/info.cfm?pg=headmr>
- After surgery, **radiation (as adjuvant therapy)**. Mild side effects for bone arm. Onc says doesn't weaken bones. 5 sessions done, no side effects to arm.
<http://www.nhs.uk/Conditions/Radiotherapy/Pages/Side-effects.aspx>
- CEA remained 13.1 2 weeks later – Petscan confirmed rectum still active; also new tumor mets in Spine. After treating the spine tumor, cea continued to drop, to less than 5 (with effect of chemo and bisphosphonates as well)

Bone Mets (7)

- Adjuvant Chemo after surgery and radiation. Highly recommended? Shahroki not sure. (doesn't help osteosarcomas <https://www.ncbi.nlm.nih.gov/m/pubmed/11745799/>). Overused in young patients? <http://www.cancertherapyadvisor.com/gastrointestinal-cancers/colon-cancer-adjuvant-chemotherapy-fails-prolong-survival-young-patients/article/633539/> - will do chemo several cycles, especially with spine mets
- Drs Harb & Nabbout recommend Chemo (Harb Flofox, Nabbout Flofiri) to prevent spread. Oxaliplatin rechallenge good given previous response?
<https://www.ncbi.nlm.nih.gov/m/pubmed/22270106/>
- ALK (Alkaline Phosphates, also ALP) level dropped to normal the day after surgery, but then surged to very high level. Drs can't explain (one suggested measurement error). Level is expected to rise after bone trauma, and then drop back once healed, but drop right after surgery is unexplained. My theory: the drain placed after surgery removed the ALK effect from rest of blood until removed.
<https://www.ncbi.nlm.nih.gov/m/pubmed/16568384/>
<http://www.tandfonline.com/doi/pdf/10.3109/17453677208991272>
<https://www.ncbi.nlm.nih.gov/m/pubmed/627581/>

Bone Mets (8)

- **Spine Mets: Cyberknife** best approach? <http://www.stlouiscyberknife.com/wp-content/uploads/2016/09/Radical-irradiation-of-extracranial-oligometastases.pdf>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2803269/> <http://www.austincyberknife.com/conditions-treated/metastatic-cancer/> Shahroki, Nabbiot say curative; others palliative <https://ro-journal.biomedcentral.com/articles/10.1186/s13014-017-0852-6> <https://ro-journal.biomedcentral.com/articles/10.1186/s13014-017-0852-6>
<https://www.ncbi.nlm.nih.gov/m/pubmed/26541868/> <https://emedicine.medscape.com/article/1157987-overview#a5>
- **Need Bisphosphonates!!** Fights mets, strengthens bone; Zoledronic acid (Zometa) better than Pamidronate
<http://www.tandfonline.com/doi/abs/10.3111/200508001012>
http://ascopubs.org/doi/abs/10.1200/jco.2004.22.14_suppl.857
<http://empharmd.blogspot.com/2012/09/iv-bisphosphonates-pamidronate-vs.html#!/2012/09/iv-bisphosphonates-pamidronate-vs.html> <https://www.ncbi.nlm.nih.gov/pubmed/11208851/>
<https://www.ncbi.nlm.nih.gov/pubmed/11693896/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4620752/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1661643/>
<http://www.firstwordpharma.com/node/1171657#axzz4vzjnQ1zd>
<https://www.drugs.com/dosage/zometa.html> <http://chemocare.com/chemotherapy/drug-info/Zometa.aspx>
- **Minimal Bisphosphonates side effects** (limited to first injection):
<https://academic.oup.com/annonc/article/17/6/897/196284/Management-of-the-adverse-effects-associated-with> <http://www.myelomapennstate.net/Contents/30b-BoneDis-Tx.htm>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4648996/>

Bone Mets (9)

- Radiation (SBRT, aka Cyberknife) can kill the tumor – Dr Yang says it has 90+% control rate.
http://ascopubs.org/doi/abs/10.1200/JCO.2017.35.15_suppl.10122
<https://www.sciencedirect.com/science/article/pii/S150713671000057X>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4872903/> <https://therss.org/docs/dc70401d-4768-40cb-8519-9cc33da04c8e.pdf>
- Bisphosphonates also fight the cancer and recurrence: <http://www.cancernetwork.com/bone-metastases/bisphosphonates-prevention-and-treatment-bone-metastases>
<https://www.oncolink.org/cancers/bone/bone-metastases/bone-metastasis-treatment-with-medication>
- Single or multiple sessions? One study says multiple better
<http://thejns.org/doi/pdf/10.3171/2012.4.SPINE11902> but Dr Yang says he uses higher dose (24 Gy) which is better in one session. Another study shows single session giving good control for all
<http://onlinelibrary.wiley.com/doi/10.1002/cncr.21467/full>
http://onlinelibrary.wiley.com/store/10.1002/cncr.21467/asset/21467_ftp.pdf;jsessionid=B583C910B20DFFDA8D98A7E8972D107E.f02t03?v=1&t=j94n0nld&s=a58a7b5023323928257c1b34480c4ce20c97e003
- Myelogram helps for better MRI of spine – minimal side effects:
http://www.hopkinsmedicine.org/healthlibrary/test_procedures/orthopaedic/myelogram_92,P07670

Bone Mets (10)

- SBRT causes major pain flare!! (transient Myelitis). Lasted 2 days in our case, very painful! Not as advertised. <http://dribrook.blogspot.com/p/radiation-side-effects.html>
<http://ascopubs.org/doi/full/10.1200/jco.2010.31.1993>
<https://www.inspire.com/groups/advanced-breast-cancer/discussion/gamma-knife-or-cyberknife-for-spine-side-effects/>
<https://www.med.unc.edu/radonc/patient/treatments/ck/faq>
<http://www.cyberknife.com/treatment/quality/spine>
- So does Myelogram puncture! Lasted several weeks! Spinal headache
<https://academic.oup.com/bja/article/91/5/718/253361> <https://www.spine-health.com/forum/discussion/8433/treatment/spinal-injections/headache-after-myelogram> <https://www.webmd.com/pain-management/pain-management-spinal-headaches> <https://www.mayoclinic.org/diseases-conditions/spinal-headaches/basics/definition/con-20025295> <https://www.mayoclinic.org/diseases-conditions/spinal-headaches/basics/causes/con-20025295>
- Corticosteroids (Dexamethadone) help the pain, plus Oxycodon, Oxycotin
<https://www.spineuniverse.com/conditions/back-pain/low-back-pain/corticosteroids-treatment-acute-low-back-pain> ; Tylenol helps (with inflammation especially).
- Degenerative changes on CT: ignored by onc? <https://www.mayoclinic.org/diseases-conditions/osteoarthritis/expert-answers/arthritis/faq-20058457>

Bone Mets (11)

- Sclerotic tumor (focus) in Iliac? Slow growing tumor?
<https://www.healio.com/hematology-oncology/lung-cancer/news/print/hemonc-today/%7Bf478fbdf-01d2-4ef7-a92c-c64e097c6030%7D/new-sclerotic-lesions-on-ct-may-represent-treatment-response-not-progression-of-metastatic-disease>
<https://radiopaedia.org/articles/sclerotic-bone-metastases>
<https://www.zocdoc.com/answers/3905/what-is-a-sclerotic-lesion>
- Need Calcium and Vitamin D supplements ; glutamine, Boswellia for neuropathy
<http://www.letstalkbonemets.com/protect-bone-health/supplements-with-bone-targeting-meds/> <https://csn.cancer.org/node/163727>
<http://www.speedyremedies.com/home-remedies-for-nerve-pain.html>
<https://healmynerves.com/product/boswellia-complex/>
- Hyperintensities on STIR: tumors in making?
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4697119/>
<https://radiopaedia.org/articles/bone-marrow>
<https://www.hindawi.com/journals/tswj/2014/380814/>
<https://www.hindawi.com/archive/2015/812794/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4126144/>
<https://meetinglibrary.asco.org/record/81598/abstract>
<http://www.myelomapennstate.net/Contents/09-BoneDis-MRI.htm>
<https://www.healthcentral.com/article/what-does-hyperintensity-mean-mri-report>

Bone Mets (12)

- Small nodules on Sacrum, were there last year, small (few mm) unchanged- probably Meningiomas?? Benign? Turns out to be regular “Schwannomas” (Shawarmas ☺), a symptom of Neurofibromatosis. Not due to Schwannomatosis, which is a more severe genetic disorder of NF gene (hopefully we don’t have it – we don’t have one gene based on initial genetic test, but they say two genes are involved, and plan a blood test for second). Something to watch, but not serious yet.

<https://en.wikipedia.org/wiki/Schwannomatosis> <https://www.mayoclinic.org/diseases-conditions/neurofibromatosis/symptoms-causes/syc-20350490>

<https://www.myvmc.com/diseases/meningioma-of-the-spinal-cord/>

<https://www.omicsonline.org/open-access/spinal-meningiomas-a-review-2165-7939-3-157.php?aid=23172>

- Our adjuvant chemo sessions interrupted by allergic reaction to Oxaliplatin-discontinued. <https://www.ncbi.nlm.nih.gov/pubmed/19149322/> <http://theoncologist.alphamedpress.org/content/9/5/546.full> May need to start on Folfiri. <http://www.cancerresearchuk.org/about-cancer/cancer-in-> https://academic.oup.com/annonc/article/21/suppl_7/vii130/193777 <https://www.ncbi.nlm.nih.gov/pubmed/15816629/> <http://www.onclive.com/peer-exchange-archive/mcrc-therapeutic-strategies/colorectal-cancer-folfox-versus-folfiri-in-the-mavericc-trial> <https://www.everydayhealth.com/colon-cancer/specialists/folfox-or-folfiri-for-metastatic-colon-cancer.aspx>

Schwannomas

- Our genetic tests show no family tendency to Schwannomas

The screenshot shows an email inbox from the MSKCC MailGate SC interface. The inbox header includes links for Suggested Sites, Add to tSpace Bookmarks, eLink, Help Desk, HROneStop, West Coast still wet af..., and Webphone. Below the header, a message from Magan Trottier is selected.

MSKSecure:Follow-up

From: Magan Trottier <trottiem@mskcc.org>
To: sabujawdeh@yahoo.com <sabujawdeh@yahoo.com>
Date: 22 March 2018 11:37
Expires in: 43 days

MSKSecure:Follow-up

[sa.pdf \(1.83 MB\)](#)

All the best,
Magan

Magan Trottier, MS, MSc, CGC
Senior Genetic Counselor

Clinical Genetics Service | Memorial Sloan Kettering Cancer Center
Rockefeller Outpatient Pavilion | 160 East 53rd Street, 6th floor
(P) 212-610-0410 | (F) 646-227-7244 | trottiem@mskcc.org

https://smmail1.mskcc.org/enduser/def/en/compose-mail.html

100% 3:52 PM 4/8/2018

Windows Taskbar icons: Windows, Internet Explorer, File Explorer, Microsoft Edge, RSA Security, Microsoft Word, Microsoft Excel, Microsoft PowerPoint.

Bone Mets (12)

- After 4 chemo sessions after cyberknife of L2 metastasis, CEA is at 4, and scans are clear; need 4 more chemos and then check Rectum if still active. Rectum still shows small tumor, not FDG Avid on Petscan. CEA hovering around 4.
- Possible Hernia (reducible) in anterior abdomen
<https://emedicine.medscape.com/article/149608-overview> . Dr Salim says there is a “gap” probably due Liver surgery impact on abdomen muscle. Need to watch if it resolves, or need an operation (Dr Aguilar thinks it wont get better, but may operate on it if/when we do the rectum).
- Dr Salim sees PET activity in left shoulder muscle, and in right forearm muscles (not bone?). Warning flag: ALK levels rising – 188 from 165, previously signaled the L2 tumor.
<https://www.clinicaladvisor.com/hospital-medicine/elevated-alkaline-phosphatase/article/600760/>

Bone Mets

- Raised ALK Alkaline Phosphatase – not always sign of bone cancer- our case shows it is primarily raised by chemo.

<https://apps.komen.org/forums/tm.aspx?high=&m=13468&mpage=1#44501>

<https://www.cancertherapyadvisor.com/general-oncology/elevated-liver-function-tests-and-chemotherapy/article/317204/>

<https://community.breastcancer.org/forum/105/topics/782476>

<https://csn.cancer.org/node/238500>

<https://www.ncbi.nlm.nih.gov/pubmed/16274987/>; Neulasta could also raise it

<https://www.ehealthme.com/ds/neulasta/blood-alkaline-phosphatase-increased/> <https://www.ncbi.nlm.nih.gov/pubmed/15565824/>

<https://www.clinicaladvisor.com/hospital-medicine/elevated-alkaline-phosphatase/article/600760/>

<https://www.tandfonline.com/doi/abs/10.1080/13102818.2007.10817444>

- Radiation, including SBRT can also raise ALK

<http://journals.sbm.ac.ir/jps/article/viewFile/11864/9883>

- <http://theoncologist.alphamedpress.org/content/4/6/459.full> spine mets overview <https://www.uwhealth.org/healthfacts/cancer/4418.pdf>

Bone Mets (13)

ALK

Value
Normal range

High 188 U/L
=<130 U/L

ALKALINE PHOSPHATASE HISTORY



PREVIOUS LABS

Date	Value
January 22, 2018	High 188 U/L
January 8, 2018	High 165 U/L
December 26, 2017	High 165 U/L

Remaining Rectum & Lung nodule

- Scans 2-23-2018 show rectum still lit, as well as 0.8cm lung nodule from original diagnosis
- Option for rectum (other than TME): Brachytherapy <https://www.mskcc.org/clinical-updates/endorectal-brachytherapy> Dr Abraham Wu <https://www.cancer.org/cancer/colon-rectal-cancer/treating/radiation-therapy.html>
 - 7.5cm high tumor- difficult for Brachytherapy
 - Dr Wu suggested a second dose of radiation – but Dr Aguilar thinks it wont help
<http://www.cnn.com/2009/HEALTH/expert.q.a/11/11/repeat.radiation.brawley/index.html>
https://community.macmillan.org.uk/cancer_experiences/ask_the_expert/ask_about_radiotherapy/f/34905/t/114048
 - In any case, double checking petscan shows a hot lymph node- so **surgery needed** – another MSK messup
- Questionable focus in Pubic Ramus – possibly urine stain
- Option for lung nodule: SBRT (aka Cyberknife); but we may have two nodules, Dr Wu hesitating given widespread disease – pushed for treating the one nodule that is avid
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3942283/> <https://www.cancercenter.com/colorectal-cancer/cyberknife/> <https://www.karger.com/Article/FullText/446486>
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4387394/>
 - <https://www.ncbi.nlm.nih.gov/pubmed/27522627/>
 - <https://www.sciencedirect.com/science/article/pii/S1556086415306973>
 - https://www.researchgate.net/profile/Jin_Ho_Kim2/publication/43051399_Oligometastases_confined_one_organ_from_colorectal_cancer_treated_by_SBRT/links/57170abe08aeefeb022c40b4.pdf

Lung SBRT

- Some possible side effects: radiation pneumonitis(Wu says 5%; Wang says 20%; this report <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4973648/> says almost 35%. <https://ro-journal.biomedcentral.com/articles/10.1186/s13014-015-0546-x> says 4%. Luckily we did not have any side effects.
- 60 GY dose for pulmonary CRC mets – need higher for better control <https://academic.oup.com/jjco/article/40/2/125/1004357>
- Of course radiologist missed another nodule – tagged by Dr Salim. Grown since August 2017, showing faintly in PETscan. Will have to SBRT as well after rectal surgery.

Rectal Surgery

- <https://www.mskcc.org/cancer-care/patient-education/about-your-low-anterior-resection-surgery> LAR Low Anterior Resection (TME- Total Mesorectal Excision).
<https://www.mskcc.org/cancer-care/patient-education/your-surgery-msk-main-hospital>
- Will need adjuvant chemo – 3 months is good enough?
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5582034/>
<https://www.cancertherapyadvisor.com/colon-cancer-adjuvant-chemo-six-three-months-treatment-risk/article/756880/>
- Disposable pouches for ileostomy? <http://www.bwardostomy.org/to-drain-or-not-to-drain-drainable-vs-disposable-pouches-by-boa-member-frank-malanga/>
<https://www.amazon.com/100PCS-Colostomy-One-Piece-Disposable-pouches/dp/B074PTKC51?th=1>
- Tumor deposits & tumor budding present in pathology- not good-but lymph nodes dead (good)
<https://medivizor.com/blog/SampleLibrary/colorectal-cancer/what-are-tumor-deposits-and-what-do-they-mean-for-patient-outcome/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4309783/>
<https://www.sciencedirect.com/science/article/pii/S0046817715003123> affects staging
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3756354/>
- 0.1cm margin (radial) – best they could do – not good- 1 cm recommended (especially for KRAS)

Rectal Surgery (2)

- Tylenol was prescribed (975mg every 6 hours) during recovery in hospital and after leaving. Two weeks later, AST/ALT numbers shot out the roof, and Dr Shahrokni was worried about liver damage, etc. Turns out Tylenol does that, so we stopped it in time. Using Dexamethadone instead for the back pain also caused the numbers to shoot again, so stopped and turned to Oxycodone and Oxycontin plus Ibuprofen (bad for kidneys! – Toradol was given in hospital), as well as Hydromorphone (Dilaudid - opioids).

https://www.medicinenet.com/tylenol_liver_damage/article.htm#what_should_be_done_if_acetaminophen_toxicity_is_suspected https://www.medicinenet.com/tylenol_liver_damage/article.htm
<https://emedicine.medscape.com/article/820200-workup> <https://www.webmd.com/a-to-z-guides/news/20060705/study-tylenol-liver-effect-stronger>

https://www.emedicinehealth.com/liver_blood_tests/article_em.htm#facts_and_definition_of_liver_blood_test <https://livertox.nlm.nih.gov/Ibuprofen.htm> <https://www.goodrx.com/blog/is-ibuprofenadvil-bad-for-my-liver-and-kidneys/> <https://www.rxlist.com/toradol-drug.htm>

https://www.medicinenet.com/tylenol_liver_damage/article.htm#do_the_recommended_doses_of_tylenol_cause_any_liver_damage <https://www.goodrx.com/blog/the-ten-worst-medications-for-your-liver/>
<https://livertox.nlm.nih.gov/Opioids.htm> <https://www.webmd.com/drugs/2/drug-9130/dilaudid-oral/details>
https://www.medicinenet.com/liver_blood_tests/article.htm <https://livertox.nih.gov/Oxycodone.htm>
<https://livertox.nlm.nih.gov/Corticosteroids.htm> <https://www.healthline.com/health/dexamethasone-oral-tablet#alternatives> <https://www.ncbi.nlm.nih.gov/m/pubmed/18850354/>

- Surgery also causes ALT to rise, especially Laparoscopic:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4611348/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3134700/>
<https://jamanetwork.com/journals/jamasurgery/fullarticle/1790379>
<https://www.ncbi.nlm.nih.gov/m/pubmed/16583192/> <https://www.wjgnet.com/1007-9327/full/v9/i2/364.htm> <https://www.ncbi.nlm.nih.gov/m/pubmed/12532468/>

Rectal Surgery - 3

- Ileostomy diet:

http://www.uhn.ca/patientsfamilies/health_information/health_topics/documents/eating_after_your_ileostomy.pdf

<https://www.badgut.org/information-centre/ostomies/diet-and-ostomies/> <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-blog/ileostomy-diet/bgp-20056239>

<http://www.securicaremedical.co.uk/advice-and-support/stoma-care/diet-with-a-stoma/ileostomy-food-and-drink-hints-and-tips>

- Scan shows a swollen section of colon, possibly colitis. Drs seem to ignore!!

https://www.medicinenet.com/colitis/article.htm#colitis_definition_and_facts

Back Pain 1 - Kyphoplasty

- To make things worse, backpain from L2 irradiated tumor increased significantly. Kyphoplasty was recommended (Dr Eric Lis), plus ablation for nerves.
<https://www.spine-health.com/treatment/back-surgery/description-kyphoplasty-surgery> <https://www.spine-health.com/treatment/back-surgery/kyphoplasty-considerations-and-alternatives> <https://www.healthline.com/health/bone-health/kyphoplasty>
<https://www.google.com/amp/s/www.radiologyinfo.org/en/amp/vertebro.html>
<https://www.spine-health.com/treatment/back-surgery/description-kyphoplasty-surgery>
- Platelet count dropped before the Kyphoplasty and necessitated a platelet infusion. Again: Ibuprofen does that as do NSAIDs!
<http://medicineworld.org/physicians/hematology/thrombocytopenia.html>
<https://www.mds-foundation.org/forums/topic/ibuprofen/>
- Backpain continued after Kyphoplasty for days
<http://www.ajnr.org/content/33/2/370>
<http://www.mendelsonortho.com/patient-resources/patient-education/spine/kyphoplasty/>

Back Pain 2- Ablation

- <http://www.cancernetwork.com/oncology-journal/percutaneous-ablation-safe-effective-treatment-bone-tumors> <http://sperlingmedicalgroup.com/2017/07/21/4-ablation-approaches-to-treat-painful-bone-metastasis/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4078106/>
- Used Osteocool <http://professional.medtronic.com/osteocool/index.htm>
- Biopsy showed no cancer left in L2 met; but Kyphoplasty should have been done earlier:
<https://www.spine-health.com/treatment/back-surgery/kyphoplasty-considerations-and-alternatives>
- Pain medicine prescribed Nuerontin/Gabapentin caused depression and lethargy; Lyrica also prescribed, same effect <https://www.webmd.com/drugs/2/drug-93965/lyrica-oral/details>
[https://www.medicinenet.com/gabapentin/article.htm#what are the side effects of gabapentin](https://www.medicinenet.com/gabapentin/article.htm#what%20are%20the%20side%20effects%20of%20gabapentin); Ativan for anxiety we did not use <https://www.webmd.com/drugs/2/drug-6685/ativan-oral/details>
- Continued pain: possible from other causes
https://link.springer.com/chapter/10.1007%2F978-3-319-60072-7_43
<http://www.ajnr.org/content/33/2/370> sacroiliac and/or lumbar facet joints. After first injection into L2, tried injection into SI and pain reduced dramatically

Ileostomy Reversal

- <https://www.mskcc.org/cancer-care/patient-education/about-your-ileostomy-closure-surgery-01>
- We had stomach pains (sounds like obstruction, partial) compounded by back pain. <https://www.livestrong.com/article/280887-symptoms-following-ileostomy-reversal/>

Another Lung Nodule 1

- Another lung nodule needed SBRT. Dr Salim had already seen it, but MSK would not confirm, until it lit up hard.
- CEA went from 5.8 to 12 in 12 days. Very steep for a lung nodule? Cea doubling time is a clue ignored by oncs. <https://watermark.silverchair.com/hyf011.pdf>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2011150/> <https://www.researchgate-net.cdn.ampproject.org/v/s/www.researchgate.net/publication/8392266> Distributions in CEA Doubling Time Differ in Patients with Recurrent Colorectal Carcinomas/amp?amp js v=0.1&usqp=mq331AQGCAEYASgB#origin=https%3A%2F%2Fwww.google.com&prerenderSize=1&visibilityState=prerender&paddingTop=54&p2r=0&horizontalScrolling=0&csi=1&aoh=15263363285938&viewerUrl=https%3A%2F%2Fwww.google.com%2Famp%2Fs%2Fwww.researchgate.net%2Fpublication%2F8392266">Distributions in CEA Doubling Time Differ in Patients with Recurrent Colorectal Carcinomas%2Famp&history=1&storage=1&cid=1&cap=swipe%2CnavigateTo%2Cc cid%2Cfragment%2CreplaceUrl
<https://academic.oup.com/jco/article/32/2/54/997765>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2011150/>
<https://academic.oup.com/jco/article/32/2/41/997783>
- SBRT again the solution <https://aapm.onlinelibrary.wiley.com/doi/pdf/10.1118/1.2816228>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5411903/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3968553/>
<http://thejns.org/doi/pdf/10.3171/2016.4.SPINE151523> https://www.aapm.org/pubs/reports/rpt_101.pdf prolonged is better <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5654127/> <https://ro-journal.biomedcentral.com/articles/10.1186/s13014-015-0340-9> can turn on immune system
https://www.cancercenter.com/discussions/blog/focused-radiation-may-help-turn-on-the-immune-system/?invsr=paid_social&utm_budget=corp&utm_channel=social&utm_site=facebook&utm_tactic=promoted&sf184386111=1

Lung Nodule 2

- CEA rise could be from lung SBRT- can show up even 15 months later!
https://www.researchgate.net/publication/44889757_A_Case_of_Radiation_Fibrosis_Appearing_as_Mass-Like_Consolidation_after_SBRT_with_Elevation_of_Serum_CEA?sg=lbUgeu_BJV_oTUWJzGDIZZx5GaGbqOovkCxqUOyB-4DzF7L4y0ut7pGNQnGUblbGQbSnO219CZg
- Scan shows “patchy consolidation” of radiated nodule. Expected:
<https://www.sciencedirect.com/science/article/pii/S1556086415310388>
<https://www.hindawi.com/journals/crim/2010/986706/>
<https://www.healthhype.com/consolidation-in-lung-signs-symptoms-and-causes.html>
- Skin rash around chest turned out to be a “steroid rash” and not radiation related. The amazing Dr LaCouture identified the cause immediately, after a scare by nurses and Oncs! Another side effects of steroids: severe leg pain when stopped suddenly - https://www.hss.edu/conditions_steroid-side-effects-how-to-reduce-corticosteroid-side-effects.asp
<https://www.ehealthme.com/ds/dexamethasone/joint-pain/>
<https://www.healthline.com/health/dexamethasone-oral-tablet#interactions>

Lung Nodules (3)

- Drs resiting treatment given spread – bilateral – many (says 3 in right, 3 in left). May consider mix of RF ablation and SBRT, to avoid toxic radiation impact.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3259330/>

- Multiple nodule treatment is GOOD:

<http://ascopubs.org/doi/abs/10.1200/jco.1996.14.7.2047>

<https://www.medpagetoday.com/meetingcoverage/elcc/32300>

<http://www.ascopost.com/issues/january-15-2012/resection-of-metastatic-lesions-extends-survival-in-multiple-tumor-types/>

Pelvic-Abdominal Mets

- Setback with 3 pelvic infections/mets and one abdominal wall nodule. The abdominal nodule was there since Oct 2017, ignored by Aguilar & Shahrokni, saying it is surgical inflammation. Ileostomy was done adjacent to it, probably caused the mass spread. Abdominal implant in scar usually happens!

https://en.m.wikipedia.org/wiki/Abdominal_wall

<https://www.clinicsandpractice.org/index.php/cp/article/view/cp.2012.e9/542> <https://www.ncbi.nlm.nih.gov/m/pubmed/10826422/>

<https://www.hindawi.com/journals/cris/2018/1974627/>

<https://wjs.biomedcentral.com/articles/10.1186/1477-7819-8-17>

- Columbia is very good at treating abdominal tumors -

<http://columbiasurgery.org/news/2017/01/13/arresting-secondary-cancers-abdominal-wall>

Pelvic-Abdominal Mets (2)

- Pre-sacral mets: <https://colorectal.surgery.ucsf.edu/conditions--procedures/presacral-tumors.aspx> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3056626/#!po=31.0000> <https://csn.cancer.org/node/146329> <http://www.winchesterhospital.org/health-library/article?id=577661> <https://www.hindawi.com/journals/ijso/2012/464380/> http://www.clinicsinsurgery.com/pdfs_folder/cis-v2-id1496.pdf <https://www.sciencedirect.com/science/article/pii/S2237936317300205>
- posterior approach
<https://www.sciencedirect.com/science/article/pii/S2210261215002357> surgery
<https://www.wjgnet.com/2219-2832/full/v5/i1/127.htm>
<https://colorectal.surgery.ucsf.edu/conditions--procedures/presacral-tumors.aspx>
<https://www.hindawi.com/journals/ijso/2012/464380/>
- Cytoreduction and HIPEC is one treatment option – tough long surgery, high recurrence rate. <https://www.mskcc.org/clinical-updates/targeting-peritoneal-cancer-metastases>
<https://www.cancertherapyadvisor.com/gastrointestinal-cancers/colorectal-cancer-hyperthermic-intraperitoneal-chemotherapy-carcinomatosis/article/574215/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5501638/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4650975/>
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.120.9978&rep=rep1&type=pdf> <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2013-01214>

Spread Due to Cutting Through Tumor

- <https://www.sciencedirect.com/science/article/pii/S2237936317300205>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4031257/>
<https://www.hindawi.com/journals/tswj/2013/538152/>
- <http://www.drdekel.com/content/biopsies-can-cause-cancer-spread> If careful biopsies can cause it, imagine cutting through a tumor randomly!! <http://www.mrisusa.com/dangers-prostate-biopsies.php>
<https://www.cancertreatmentwatch.org/general/biopsies.shtml> <https://www.medicaldaily.com/cancer-biopsy-wont-spread-tumors-data-may-be-unconvincing-317136> <https://www.prnewswire.com/news-releases/detail.html//content/prnewswire/us/en/news-releases.detail.html/do-biopsies-spread-cancer-167177565.html.html> <https://www.prnewswire.com/news-releases/do-biopsies-spread-cancer-167177565.html> <http://blogs.discovermagazine.com/80beats/2011/02/15/the-unkindest-cut-how-wounds-can-trigger-tumor-growth/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4015162/>
- They do cause spread – especially when done twice (rectal surgery and ileostomy reversal!). Aguilar gave us a good cancer bath; we need a good chemo path (HIPEC).
<https://onlinelibrary.wiley.com/doi/pdf/10.3322/canjclin.14.3.90>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4015162/> inadvertent spread
<https://www.ncbi.nlm.nih.gov/pubmed/8331942/> cut through tumor: <https://www.quora.com/What-happens-when-you-cut-into-a-tumor-Not-around-it-but-actually-into-it>
- Even Laparoscopic surgery causes spread- FDA warning – of course much worse if cut thru tumor
https://urldefense.proofpoint.com/v2/url?u=https-3A-www.medscape.com_viewarticle_909691&d=DwICAg&c=LFYZ-o9_HUMeMTSQicvjlg&r=RMXKls19lyQYf1B1eoT_eA&m=gW3G2gAE4Jlubuo-N5dn7za7QEZ9Q72BDSZqjViOfLA&s=fOi6gM-e5tmljmgpj6R3o29IBpN5ToYTMBPSxvyL9NA&e

Second Line Chemo

- Folfiri. Is it good to have breaks? <https://csn.cancer.org/node/308309>
<https://www.cancerresearchuk.org/about-cancer/cancer-in-general/treatment/chemotherapy/planning/changing-your-plan>
<http://coloncancersupport.colonclub.com/viewtopic.php?t=5939>
<https://slideheaven.com/discontinuation-of-bevacizumab-and-folfiri-administered-up-to-a-maximum-of-12-cy.html>
<https://academic.oup.com/annonc/article/26/7/1427/165485> no scientific judgement. Folfiri second line:
<https://www.tandfonline.com/doi/pdf/10.1080/02841860701261568>
- Taking extra months of 5FU after Folfiri treatment helps survival
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5788688/>
- If we could just do the diet & supps <https://www.cancerhorizons.com/cancer-types/colorectal/colon-cancer-improved-5-year-survival-rates/>
- Xeliri good but much more diarrhea
<https://www.ncbi.nlm.nih.gov/m/pubmed/17762434/>

Chemo (2)

- Chemo can cause complete response (our liver response case in point)
<https://www.wjgnet.com/2307-8960/full/v5/i11/390.htm>
<http://coloncancersupport.colonclub.com/viewtopic.php?t=34414>
<https://pdfs.semanticscholar.org/4b58/ef90f63c90126242e9134df4fb2a6bca1008.pdf>
<https://link.springer.com/article/10.1007/s13691-013-0120-z>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3997706/> **Aflibercept-FOLFIRI**
<https://www.ncbi.nlm.nih.gov/pubmed/27600470/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3723164/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5120901/>
- Chemo options: <https://www.gotoper.com/publications/ajho/2016/2016oct/frontline-strategies-for-metastatic-colorectal-cancer-new-sides-to-the-story>
<https://www.nature.com/articles/bjc2013140> https://journals.lww.com/oncology-times/fulltext/2006/08250/More_Trials_Show_Versatility_of_FOLFIRI_Regimen.26.aspx
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2632873/>
- Additional chemo cycles help <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5788688/>
- Chemo doesn't last long in body
<http://coloncancersupport.colonclub.com/viewtopic.php?t=31840>
<http://www.globalrph.com/fluorouracil.htm> <https://www.drugbank.ca/drugs/DB00762> breaks not good <https://onlinelibrary.wiley.com/doi/abs/10.1002/1097-0142%2819900901%2966%3A5%3C857%3A%3AAID-CNCR2820660508%3E3.0.CO%3B2-G>

Chemo (3)

- CEA Transients/surge not un-expected during first few weeks [https://www.clinical-colorectal-cancer.com/article/S1533-0028\(11\)70042-1/pdf](https://www.clinical-colorectal-cancer.com/article/S1533-0028(11)70042-1/pdf)
https://academic.oup.com/annonc/article/25/suppl_2/ii75/157965
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.494.820&rep=rep1&type=pdf>
<https://fightcolorectalcancer.org/blog/cea flares during chemo dont mean cancer progression/>
<https://www.ncbi.nlm.nih.gov/m/pubmed/20378505/>
<https://www.tandfonline.com/doi/pdf/10.1080/02841860410032380>
<https://academic.oup.com/annonc/article/27/8/1565/1741538>
- Dexamethadone can affect cancer fight – some trials exclude it – as it weakens immune system
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4839331/>
- Sildenafil, Atropine, Benadryl, steroids and Pepcid given to reduce side effects of folfiri; & Claritin for bone pain from neulasta <https://www.cancertherapyadvisor.com/sildenafil-and-cancer-potential-positives/article/779345/> late effects: <https://www.mdanderson.org/transcripts/poe-chemotherapy-late-effects-phan.htm> <http://theoncologist.alphamedpress.org/content/14/11/1095.full>
<https://www.ncbi.nlm.nih.gov/m/pubmed/26112080/>
- Short cycle says CEA dip in week one, steady in weeks 2-3
<http://ar.iiarjournals.org/content/33/1/253/T2.large.jpg>
<http://ar.iiarjournals.org/content/33/1/253.full.pdf+htmlIKETHE>
<https://www.reliasmedia.com/articles/19242-cea-flare-and-colorectal-cancer-a-good-prognostic-sign> our cea dropped first week (25 to 20) then stayed at 20 next two weeks.
- ctDNA tests can show if chemo is needed or not Australia trial <https://www.labroots.com/trending/cell-and-molecular-biology/13036/saving-patients-unnecessary-chemotherapy-blood-test>
- Milk protein helps side-effects <https://vtnews.vt.edu/articles/2018/09/cals-cancer.html>

Peritoneal mets?

- Shahrokni admits that given the error of Aguilar, we probably have peritoneal mets, especially since cea not going down even while petscan shows diminished avidity
- One hint: high platelets to lymphocyte ratio
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0175074>
- Trifluridine – Tipiracil can help <https://www.spandidos-publications.com/10.3892/ol.2017.6258>
- Car –T Cell trial at Rutgers for peritoneal disease! Ineligible because of bone mets even though resolved!
- Prognostic indicators:
<https://www.tandfonline.com/doi/full/10.1080/02656736.2018.1464668>
danger?? <https://www.labroots.com/trending/cell-and-molecular-biology/12910/-39>
- Low lymphocytes ratio bad prognosticator <http://www.jcancer.org/v06p0616.htm>
<https://www.ncbi.nlm.nih.gov/m/pubmed/28707088/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4566389/>

Time for Trials?

- Tumor infiltrating lymphocytes (TIL): Maryland;
<https://www.smartpatients.com/trials/NCT01174121?condition=colorectal-cancer>
- mFOLFIRI with MEK162: Utah (for KRAS):MEK no good (Dr Manju, Columbia Univ.)
<https://www.smartpatients.com/trials/NCT02613650?condition=colorectal-cancer>
<https://clinicaltrials.gov/ct2/show/NCT02613650>
- Tumor Associated Antigen- T Cells: Houston(not recruiting)
<https://www.smartpatients.com/trials/NCT02239861?condition=colorectal-cancer>
<https://clinicaltrials.gov/ct2/show/NCT02239861>
- Pexa-Vec Oncolytic virus: Bethesda, Maryland
<https://www.smartpatients.com/trials/NCT03206073?condition=colorectal-cancer>
<https://clinicaltrials.gov/ct2/show/NCT03206073>
- PEN-866: Bethesda, Md,
<https://www.smartpatients.com/trials/NCT03221400?condition=colorectal-cancer>
- Glutaminase Inhibitor: Cleveland,
<https://www.smartpatients.com/trials/NCT02861300?condition=colorectal-cancer>
- Natural Killer cells: Cleveland (temporarily closed) <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2017-00305>
- Quinacrine Hydrochloride: Philadelphia <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2016-00139>

Trials (2)

- ASN007: MD Anderson Houston, <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2018-00820>
- Donor GVAX: Baltimore <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2014-00919> GVAX trial not successful (Dr Manji Columbia)
- CPI-613: North Carolina <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2014-01779>
- Lamivudine: p53 mutations; Massachussets <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2017-01688>
- Gemcitabine: John Hopkins <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2012-01337>
- Intratumorally Dosed INT230-6: Philadelphia <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2017-01040>

Trials (3)

- MGD007: Baltimore <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2015-00188>
- **Irinotecan Hydrochloride and WEE1 Inhibitor AZD1775: NYU KRAS**
<https://www.smartpatients.com/trials/NCT02906059?condition=colorectal-cancer> after folfox first line <https://clinicaltrials.gov/ct2/show/NCT02906059> **no good since we've had second line**
- Napabucasin (BBI-608): many states with Folfiri
<https://www.smartpatients.com/trials/NCT02753127?condition=colorectal-cancer>
- CYCLIN-DEPENDENT KINASE INHIBITOR PD 0332991: Philadelphia
<https://www.smartpatients.com/trials/NCT01037790?condition=colorectal-cancer>
- Intraperitoneal (IP) Oxaliplatin: Massachussets;
<https://www.smartpatients.com/trials/NCT02833753?condition=colorectal-cancer>
- Nivolumab, Ipilimumab, and Radiation Therapy: Massachussets
<https://www.smartpatients.com/trials/NCT03104439?condition=colorectal-cancer>

Trials (4)

- CRC Immunotherapy https://res.mdpi.com/cancers/cancers-09-00050/article_deploy/cancers-09-00050.pdf?filename=&attachment=1
- Wael Harb Indiana trial - **Enadenotucirev and PD-1 Inhibitor :** <https://clinicaltrials.gov/ct2/show/NCT02636036?term=NCT02636036&rank=1> wharb@horizonbioadvance.com <https://aawsat.com/node/1469791> variation very effective? Dr Harb says still open
- **Ensituximab (E) in patients (pts) with refractory metastatic colorectal cancer (mCRC): minor improvement** http://ascopubs.org/doi/abs/10.1200/JCO.2017.35.15_suppl.3081 <http://www.cancerbreakthroughs2020.org/press-releases/2017/1/24/cancer-breakthroughs-2020-reaches-first-clinical-trial-milestone-immunotherapy-trial-demonstrates-encouraging-survival-rates-in-patients-with-metastatic-colorectal-cancer-who FAILED-all-standard-therapy>
- **Nintedanib (BIBF 1120) vs Placebo in Refractory Metastatic Colorectal Cancer (LUME-Colon 1)** <https://clinicaltrials.gov/ct2/show/NCT02149108> completed does not improve survival <https://www.esmo.org/Conferences/Past-Conferences/ESMO-2016-Congress/Press-Media/Nintedanib-Improves-Progression-free-Survival-but-not-Overall-Survival-in-Phase-III-Trial-of-Metastatic-Colorectal-Cancer>
- **Customized vaccines** MD Anderson: <https://www.mdanderson.org/publications/annual-report/annual-report-2017/customized-vaccines-deliver-extremely-personalized-therapy.html> Roswell: https://www.roswellpark.org/sites/default/files/therapeutic_vaccines_for_cancer_review_2014.111_april_7.pdf
- Not all cancers can use immunotherapy yet: <https://www.healthination.com/health/can-immunotherapy-cure-cancer>

TIL Trial

- Tumor Infiltrating Leucocytes: Bethesda, Maryland
<https://www.smartpatients.com/trials/NCT01174121?condition=colorectal-cancer>
<https://clinicaltrials.gov/ct2/show/NCT01174121>
<https://www.google.com/amp/s/www.nytimes.com/2016/12/07/health/cancer-immunotherapy.amp.html> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5178827/>
<https://www.cancer.gov/research/key-initiatives/ras/ras-central/blog/2016/immunotherapy-kras-g12d-rosenberg>
- Margaret Shovlin 1-866-820-4505 IRC@nih.gov ; Mary (Beth) Link
<https://clinicaltrials.gov/ct2/show/NCT03412877?term=18-c-0049&rank=1>
<https://clinicaltrials.gov/ct2/show/NCT01174121?term=10-C-0166&rank=1>
- KRAS G12D <https://www.cancer.gov/research/key-initiatives/ras/ras-central/blog/2016/immunotherapy-kras-g12d-rosenberg>
<https://www.mdedge.com/oncologypractice/article/119629/gastroenterology/kras-targeted-t-cell-therapy-derails-metastatic> <http://www.ascopost.com/News/44237>
<https://www.curetoday.com/publications/cure/2018/summer-2018/cracking-the-nut-on-ras-mutations> **Tried for G12D trial – but not eligible since don't have the HLA 1.1 blood type!!**

CAR T-Cell Trials

- <https://www.mskcc.org/car-cell-therapy>
<https://link.springer.com/article/10.1007/s00262-016-1895-5>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5484157/>
<https://www.esmo.org/Oncology-News/Evolving-Field-of-CAR-T-Cell-Therapy>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5484157/>
<https://www.mdanderson.org/publications/cancerwise/2018/02/car-t-cell-therapy--9-things-to-know.html>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5484157/#!po=23.9247>
<https://clinicaltrials.gov/ct2/show/NCT02617134> in China
- SHRINK Celyad trial: Belgium <https://www.celyad.com/en/news/celyad-announces-initiation-of-the-shrink-trial> <https://www.celyad.com/en/news/celyad-successfully-administers-cyad-01-in-first-patients-in-shrink-and-link-trials> sent email
- Upcoming: <https://www.medicalnewstoday.com/articles/321716.php>
- Amy Whitworth 877-275-7724 Trials: 1-800-767 9355 Roswell Park, Buffalo – **No Good now just Folfox first line, in Belgium**

Celyad Trials

- THINK, SHRINK, Allo-SHRINK Trials <https://www.celyad.com/en/our-science/immuno-oncology/for-scientists/clinical-trials> **No Good - only for first line Folfox**
- THINK Trial – Buffalo Roswell Park ; no chemo <https://clinicaltrials.gov/ct2/show/NCT03018405> grade4 <https://www.reuters.com/article/idUSKBN1SN1SK> complete response but regressed <https://www.celyad.com/en/news/celyad-reports-a-first-complete-response-in-a-relapsed-refractory-aml-patient-in-the-think-trial>
- SHRINK: <http://www.pharmaceuticaldaily.com/ceylad-kicks-off-shrink-trial-targeting-metastatic-colorectal-patients/> & Allo-SHRINK just approved <https://globenewswire.com/news-release/2018/07/24/1540949/0/en/Celyad-Announces-FDA-Acceptance-of-IND-Application-for-CYAD-101-a-First-in-Class-Non-Gene-Edited-Allogeneic-CAR-T-Candidate.html>
<http://www.pharmaceuticaldaily.com/ceylad-kicks-off-shrink-trial-targeting-metastatic-colorectal-patients/> <https://globenewswire.com/news-release/2018/07/24/1540949/0/en/Celyad-Announces-FDA-Acceptance-of-IND-Application-for-CYAD-101-a-First-in-Class-Non-Gene-Edited-Allogeneic-CAR-T-Candidate.html>
<https://seekingalpha.com/news/3372838-fda-oks-celyads-ind-cyadminus-101-colorectal-cancer>
<https://www.celyad.com/en/news/celyad-announces-fda-acceptance-of-ind-application-for-cyad-101-a-first-in-class-non-gene-edited-allogeneic-car-t-candidate>
- <https://www.celyad.com/en/news/celyad-reports-a-first-complete-response-in-a-relapsed-refractory-aml-patient-in-the-think-trial> <https://www.reuters.com/article/idUSKBN1SN1SK>
<https://globenewswire.com/news-release/2017/06/19/1025503/0/en/Celyad-reports-promising-early-results-at-first-dose-level-of-the-solid-arm-of-the-THINK-trial.html>

Banner Cancer Vaccine Trial

- <http://bannerhealth.mediaroom.com/2017-02-09-Banner-MD-Anderson-studies-new-colon-cancer-immunotherapy> <https://www.drugdevelopment-technology.com/news/newsimmunovative-therapies-initiates-phase-iib-study-of-cancer-vaccine-to-treat-metastatic-colorectal-cancer-5661560/>
<https://clinicaltrials.gov/ct2/show/NCT02380443?term=immunovative>
Currently on hold pending change
- Banner _ MD- Anderson in Arizona (480) 440-7458
Andrea.Winkle@bannerhealth.com
- Phone 480.256.3421 Fax: 480.256.4726
- 2940 E Banner Gateway Dr., Ste. 375
- Gilbert, Arizona 85234
- Brenda Noggy Director 1-713-530-1405 cell

Pexa-Vec

- <https://ccr.cancer.gov/news/article/combination-therapy-clinical-trial-now-recruiting-patients-with-metastatic-colorectal-cancer>
- <https://clinicaltrials.gov/ct2/show/NCT03206073>
- Bethesda, Maryland
- Oncolytic Virus plus checkpoint inhibitors

QUILT – NANT CRC Vaccine

- <https://clinicaltrials.gov/ct2/show/NCT03563157>
- NantKWest Clinical Review Team clinical.trials@NantKwest.com 800-988-6083 El Segundo California
- **QUILT 3.071: NANT Colorectal Cancer (CRC) Vaccine**
- **Recruiting – limited only for 14 days before**
- <https://www.businesswire.com/news/home/20170731005730/en/NantKwest-Announces-Durable-Complete-Responses-in%C2%A0Phase-I%C2%A0Trial%C2%A0of>

QUILT-3.028: Study of haNK™ for Infusion in Subjects With Metastatic or Locally Advanced Solid Tumors

- <https://clinicaltrials.gov/ct2/show/NCT03027128>
- No limitations
- El Segundo, California, United States, 90245
- Chan Soon-Shiong Institute for Medicine; Contact: NantKWest Clinical Review Team 800-988-6083 clinical.trials@NantKwest.com
- [http://ir.nantkwest.com/news-releases/news-release-details/nantkwest-expands-nant-cancer-vaccine-program-additional?field_nir_news_date_value\[min\]=2018](http://ir.nantkwest.com/news-releases/news-release-details/nantkwest-expands-nant-cancer-vaccine-program-additional?field_nir_news_date_value[min]=2018)
<http://www.cancerbreakthroughs2020.org/quilt-program/>
- [http://www.nant.org/Patients and Families/trials-active.php](http://www.nant.org/Patients_and_Families/trials-active.php)

NANT CRC Vaccine

- <https://clinicaltrials.gov/ct2/show/NCT03169777>
- Jim.Farmer@NantKwest.com 310-853-7522
- **QUILT-3.050: NANT Colorectal Cancer (CRC) Vaccine: Combination Immunotherapy in Subjects With Recurrent or Metastatic CRC**
- <https://immuno-oncologynews.com/2017/06/12/nant-cancer-vaccine-program-is-going-to-target-multiple-cancers/>
- Only limited to 14 days before; **not yet recruiting??**

CheckMate 9N9 Trial BMS

- **University Of Pennsylvania** - CA209-9N9-0003
3400 Civic Center Blvd
Philadelphia, Pennsylvania , 19104 , United States
- **Site Contact:** Lisa Dicicco | [267-319-2602](tel:267-319-2602)
- **Trial ID:** CA209-9N9
- <https://clinicaltrials.gov/ct2/show/NCT03377361>
- **An Investigational Immuno-therapy Study Of Nivolumab In Combination With Trametinib With Or Without Ipilimumab In Patients With Previously Treated Cancer of the Colon or Rectum That Has Spread (CheckMate9N9)**

Binimetinib + Nivolumab Plus or Minus Ipilimumab

- <https://clinicaltrials.gov/ct2/show/NCT03271047>
- **Study of Binimetinib + Nivolumab Plus or Minus Ipilimumab in Patients With Previously Treated Microsatellite-stable (MSS) Metastatic Colorectal Cancer With RAS Mutation**
- Array BioPharma Investigative Sites (2) – Philadelphia, Pennsylvania, United States 19111
- Array BioPharma, Inc 303-381-6604
clinicaltrials@arraybiopharma.com

GVAX Trial

- <https://clinicaltrials.gov/ct2/show/NCT02981524>
- Nilofer Azad, MD The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins – Maryland
- Only limited to 28 days before
- **Not recruiting**

Pembrolizumab/poly-ICLC in MRP CRC

- <https://clinicaltrials.gov/ct2/show/NCT02834052>
- Contact: Sandy Wall, RN, ADN 706-721-4430 swall@augusta.edu
- Georgia Cancer Center at Augusta University; Augusta, Georgia, United States, 30912

Radiotherapy with nivolumab & ipilimumab

- <https://clinicaltrials.gov/ct2/show/NCT03104439>
- Massachusetts general Hospital Contact: Theodore Hong, MD 617-724-8770 Boston, Massachusetts, United States, 02214
- Bristol Myers Squibb – restricted no prior PDL1

mFOLFIRI With MEK162 in Patients With Advanced KRAS

- <https://clinicaltrials.gov/ct2/show/NCT02613650>
- Adam Blair 801-213-5759 adam.blair@hci.utah.edu Salt Lake City, Utah, United States, 84112 Huntsman Cancer Institute
- Immunotherapy Summit – **Dr Manji indicated results of MEK studies not good to be announced**

Avelumab, Binimetinib, Talazoparib for RAS solid tumors

- **Dr Harb** about to start in Illinois; also in Arkansas & Houston
- <https://clinicaltrials.gov/ct2/show/NCT03637491>
- No prior Avelumab, PARP or MEK
- Contact: Pfizer CT.gov Call Center 1-800-718-1021
ClinicalTrials.gov_Inquiries@pfizer.com

Phase I Study of Enadenotucirev and PD-1 Inhibitor in Subjects With Metastatic or Advanced Epithelial Tumors (SPICE)

- <https://clinicaltrials.gov/ct2/show/NCT02636036>
- No PD1 or PDL1 prior
- Horizon Oncology Research, 1345 Unity Place, Suite 345; Lafayette, Indiana, United States, 47905 Contact: Wael Harb, MD
wharb@horizonbioadvance.com

pLADD Study of Personalized Immunotherapy in Adults With Metastatic Colorectal Cancer

- <https://www.clinicaltrials.gov/ct2/show/NCT03189030?term=pladd&rank=1>
- Flordeliza J Mendoza, CCRC 650-724-2056 flormend@stanford.edu
- No limitations
- <http://investors.aduro.com/phoenix.zhtml?c=242043&p=irol-newsArticle&ID=2344899>
<http://investors.aduro.com/phoenix.zhtml?c=242043&p=irol-newsArticle&ID=2303145> <https://www.pm360online.com/aduro-biotech-highlights-positive-clinical-results-from-second-cohort-of-phase-1b-mesothelioma-clinical-trial/> <https://endpts.com/aduro-buries-another-cancer-vaccine-after-crs-207-joins-the-lineup-of-clinical-disasters/> **initial trials of technology not encouraging**

A Clinical Trial of Durvalumab and Tremelimumab, Administered With Radiation Therapy or Ablation in Patients With Colorectal Cancer

- <https://clinicaltrials.gov/ct2/show/NCT03122509>
- No restrictions
- MSK NYC location Neil Segal, MD, PhD 646-888-4187
segaln@mskcc.org Leonard Saltz, MD 646-888-4286
- **Research shows abscopal effect only good if lymphocytes are high – ours are low**

MSKCC Trials

- <https://www.mskcc.org/cancer-care/types/colon/clinical-trials>
- ICARUS trial: HIPEC/EPIC <https://www.mskcc.org/cancer-care/clinical-trials/12-289>
- Metastasis Inhibitor NP-G2-044: <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2017-02158>
- Guadecitabine: <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2013-02005>
- **ONCOS-102 & Durvalumab:**
https://www.cancerresearch.org/news/2018/ludwig-cri-trial-virotherapy-immunotherapy?utm_source=luminate&utm_medium=email&utm_campaign=cancerimmunews&utm_content=aug2018
<https://www.smartpatients.com/trials/NCT02963831>
<https://clinicaltrials.gov/ct2/show/NCT02963831> no prior immunotherapy allowed. Lisa Shohara or Danielle McCabe 1-212-450-1515
clintrialinformation@licr.org 50% showed partial response
<https://nordiclifescience.org/new-results-from-targovaxs-oncos-102-trial/>
<https://immuno-oncologynews.com/oncos-102/>

CAR-T Cell for Peritoneal Mets

- NCT03682744 <https://clinicaltrials.gov/ct2/show/NCT03682744>
- **CAR-T Intraperitoneal Infusions for CEA-Expressing Adenocarcinoma Peritoneal Metastases or Malignant Ascites (IPC)**
- **No prior Car-T Cell therapy allowed**
- http://www.jimmunol.org/content/194/1_Supplement/143.13 works well, removes all cells!!
- Disqualified – since we had bone mets before!!

Rutgers Cancer Institute of New Jersey Recruiting
New Brunswick, New Jersey, United States, 08901
Contact: Steven C Katz, MD 401-456-5312 skatz@chartercare.org

Bi-specific T Cell

- <https://ascpt.onlinelibrary.wiley.com/doi/full/10.1002/cpt.651>
- **Bispecific T-cell Engaging Antibodies for Cancer Treatment**
- **Check with Dr Manji, Columbia (Gulam Abbas Manji)**
GAM2140@cumc.Colombia.edu 1-212-342-0248 1-212-305-0592
Herbert Irving Pavilion, 161 Fort Washington Ave, 9th floor, New York, NY 10032
- **NYU Langone trials:**
<https://clinicaltrials.med.nyu.edu/clinicaltrials/?keyword=colorectal%20cancer&tb=tx&start=1#keyword=colorectal%20cancer&tb=tx&start=1>

Anti-CD47??

- <http://www.sciencemag.org/news/2012/03/one-drug-shrink-all-tumors>
- Any trials? <http://med.stanford.edu/news/all-news/2018/10/anti-cd47-cancer-therapy-safe-shows-promise-in-small-trial.html> 30% complete response!!
- http://www.pmlive.com/pharma_news/chinas_innovent_to_start_us_trials_of_anti-cd47_cancer_drug_1254058
<https://www.clinicaltrials.gov/ct2/show/NCT03717103> not yet recruiting
- <https://www.cancer.gov/about-cancer/treatment/clinical-trials/search/v?id=NCI-2017-00905&r=1> with cetuximab? University of Pennsylvania / Abramson Cancer Center, Philadelphia; Trial of Hu5F9-G4 in Combination With Cetuximab in Patients With Solid Tumors and Advanced Colorectal Cancer -
<https://clinicaltrials.gov/ct2/show/NCT02953782>
- NCT02216409 <https://clinicaltrials.gov/ct2/show/NCT02216409> dose escalation study MSK

NTRK Approved option!

- 22% complete response – but must have NTRK fusion gene! Shahroki checking how to test-
TESTED NEGATIVE unfortunately
- <https://www.mskcc.org/experience/hear-from-patients/five-thousand-miles-home-anna-achieves-remission-advanced-lung-cancer> <https://ir.loxooncology.com/press-releases/2378241-Fda-approves-vitrakvi-larotrectinib-the-first-ever-trk-inhibitor-for-patients-with-advanced-solid-tumors-harboring-an-ntrk-gene-fusion12>
- <https://clinicaltrials.gov/ct2/show/NCT02576431>
- <https://www.labroots.com/trending/cancer/13471/fda-approves-drugs-cancers-specific-genetic-mutations>

Memorial Sloan Kettering Cancer Center
New York, New York, United States, 10065
Contact: Alex Drilon, MD

Recruiting

Stanford – Cancer Vaccine

- <http://cancer.stanford.edu/trials/vaccine.html>
<https://clinicaltrials.gov/ct2/show/NCT03410901>
- <http://med.stanford.edu/cancer/trials/results.html?ctid=NCT03410901>
- Now for non-Hodgkin lymphoma; later maybe for others
<http://med.stanford.edu/cancer/trials/flowcharts.html>
- Emailing: DL-Phase1Team@stanfordhealthcare.org (which includes Developmental Therapeutics Clinical Research Group doctors, nurses and coordinators), Study Coordinators: Jee Min Lee at 650-497-5240, or Feriel Buchholz at 650-721-4090; call 650-498-6000 make an appointment for a second opinion with a Stanford Health Care (SHC) oncologist;
- Ellen DiNucci ; Stanford Cancer Clinical Trials Information Service ; Stanford Cancer Institute, Stanford University ; (650) 498-7061 ccto-office@stanford.edu New Patient Coordinator phone number is (650) 498-6000

Next Steps?? Options

- Peritoneal Options:
 - Cytoreductions and HIPEC/EPIC? <https://hipectreatment.com/profile/dr-garrett-nash/> <http://jgo.amegroups.com/article/view/5574/5769>
<https://hipectreatment.com/profile/memorial-sloan-kettering/>
<https://www.mskcc.org/clinical-updates/targeting-peritoneal-cancer-metastases> HIPEC doesn't make much difference?
- Keep SBRT/RFA options: <https://www.astro.org/News-and-Publications/News-and-Media-Center/News-Releases/2018/High-dose-radiation-therapy-substantially-improves>
- Mannose Sugar: https://www.eurekalert.org/pub_releases/2018-11/cru-sss112018.php <https://www.mtv.com.lb/News/871469>
- Precision Immunotherapy: years away?
<https://www.medscape.com/viewarticle/906875>

Options (2)

- Lungs: conglomeration/consolidation of prior radiated SBRT tumor. Happens often? –Dr Wu says it is fibrosis effect
<https://www.hindawi.com/journals/crim/2010/986706/>
<https://onlinelibrary.wiley.com/doi/full/10.1111/1754-9485.12330>
<https://onlinelibrary.wiley.com/doi/full/10.1111/1759-7714.12162>
- Intestine: is it cancer or inflammation? Can be surgically treated
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5639415/> Radiologist & Dr Sophocleus say it is artifact of suture...
- Current plan: RFA for abdominal tumor which is growing, and continue chemo for rest.... Seems to be working on other tumors (2 out of 3 gone; not sure about intestines; lungs not avid, but has conglomeration that is avid may or may not be a problem (fibrosis from SBRT)); Did Cryoablation (less damage) – successful so far; some leaking (not normal, but not pus, so ok to watch; some pain and swelling, gave antibiotics & Ibuprofen.
- Have to watch CEA. Dr Sophocleus says it might rise after ablation- may take weeks to go down!; need to get very low eventually – even small rise is bad news
<https://www.ncbi.nlm.nih.gov/pubmed/17573747/>

Cryoablation

- Cryoablation preferred to RFA for larger tumors (> 3cms) with better local control and less side effects

<https://aasldpubs.onlinelibrary.wiley.com/doi/pdf/10.1002/hep.27548>

<https://www.hindawi.com/journals/isrn/2012/942364/>

<https://aasldpubs.onlinelibrary.wiley.com/doi/pdf/10.1002/hep.27714>

<https://www.ncbi.nlm.nih.gov/pubmed/25287439/>

<https://www.nice.org.uk/guidance/ipg369/documents/cryotherapy-for-the-treatment-of-liver-metastases-overview2>

<http://apm.amegroups.com/article/view/2426/334>

<https://www.omicsonline.org/resection-and-ablation-for-colorectal-liver-metastases-2161-069X.1000121.php?aid=14032>

[https://www.annalsthoracicsurgery.org/article/S0003-4975\(12\)00202-0/pdf](https://www.annalsthoracicsurgery.org/article/S0003-4975(12)00202-0/pdf)

- Provides additional immunal effects (abscopal effect):

<https://link.springer.com/article/10.1007/s00262-016-1891-9>

<https://www.em-consulte.com/en/article/1140981>

Cryoablation (2)

- RFA rises after ablation, then decreases slowly.
<https://onlinelibrary.wiley.com/doi/full/10.1002/cncr.21959> study shows it goes up on day one (by about 40%), but is down to 50% on day 7. Our case: it was up after one week, then unchanged after two weeks. Problem? Onc doesn't know, says study is for RFA not cryo, also depends on location. We'll have to wait for scans to see results.
<https://www.ncbi.nlm.nih.gov/pubmed/16736515/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3380330/>

HOPE!

- Oncs always speak of Sammy being an outlier- always pessimistic! We have hope:
 - lung & liver have a good chance - [https://www.clinical-colorectal-cancer.com/article/S1533-0028\(17\)30001-4/pdf](https://www.clinical-colorectal-cancer.com/article/S1533-0028(17)30001-4/pdf)
<https://www.ncbi.nlm.nih.gov/pubmed/21700179>; 60% or better 5 yr survival, 35% 10 yr
 - constant vigilance on cea, etc is good –catches early, better chance of cure
<https://www.sciencedirect.com/science/article/pii/S0748798315005120>
 - as is aggressive RFA/SBRT, etc <https://www.astro.org/News-and-Publications/News-and-Media-Center/News-Releases/2018/High-dose-radiation-therapy-substantially-improves> -
 - and especially for those with complete/almost complete response to chemo- 70% 10 yr survival!
https://www.researchgate.net/profile/Michael_Overman/publication/23399769_Pathologic_Response_to_Preoperative_Chemotherapy_A_New_Outcome_End_Point_After_Resection_of_Hepatic_Colorectal_Metastases/links/56b091c808ae9ea7c3b08230.pdf

Hopes Dashed

- Pet scan 1/24/2019 showed spread to omentum, plus multiple nodes in abdomen including iliac node and node adjacent to liver.
- Dr Shahrokni recommended HIPEC, but Dr Nash says cannot do it- too dangerous and may need to remove more than half the intestines (cannot get nutrition) and rectum (permanent colostomy). HIPEC is no longer in vogue <http://www.ascopost.com/News/58906> but CRS is key. Nash gave Sammy 6 month to a year.
- Saw Dr Kluger at Columbia, also said no (will review and come back, but not likely, for same reasons). Dr Labow at Mt Sinai was more open, but needs to verify with tumor board and still do a laparoscopy to see if can do. Still to see: Stony Brook (Georgakis said Yes), U Penn (karakousis said yes, later), & U Pittsburgh (said no) & Roswell-Buffalo (didn't followup) <https://share.upmc.com/2018/03/metastatic-abdominal-cancer/> .
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2999156/> <http://www.hipec.com/hipec/treatment-after-hipec/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4818615/> <http://hillman.upmc.com/cancer-care/surgical-oncology/koch-regional-cancer-therapy-center/treatments/hipec>
<https://www.onclive.com/publications/oncology-live/2014/january-2014/cytoreductive-surgery-and-hipec-for-peritoneal-carcinomatosis> positive story: <https://hipectreatment.com/gails-story/>
<https://www.roswellpark.org/media/news/study-results-show-low-morbidity-mortality-rates-patients-treated-hipec> <https://www.ncbi.nlm.nih.gov/pubmed/23299520/>
- Sammy thinking of Euthanasia so he does not suffer: Dignitas & EXIT in Switzerland do this.
https://en.wikipedia.org/wiki/Euthanasia_in_Switzerland <https://www.nj.com/opinion/2019/03/im-a-cancer-survivor-with-doubt-and-depression-and-im-scared-lawmakers-will-allow-doctor-assisted-suicide.html> <https://euthanasia.procon.org/view.answers.php?questionID=002166>
https://www.washingtonpost.com/national/health-science/assisted-suicide-is-controversial-but-palliative-sedation-is-legal-and-offers-peace/2018/07/27/e9b02cf8-8922-11e8-8aea-86e88ae760d8_story.html
- Palliative care may extend life and reduce pain: <https://www.curetoday.com/articles/palliative-care-may-improve-survival-quality-of-life-in-advanced-cancer>

HIPEC + CRS

- So Kluger (Columbia said no, primarily Lung issue/fear of complications holding back chemo); Bartlett in Pittsburgh also no for same reason, and unfortunately scared Georgakis (his disciple) in Stony Brook to say no even after he had said yes and laparoscopy showed no intestine/rectum issues. Labow checking Laparoscopy videos and likely to say yes; trying to win Georgakis back as well. Karakousis in U Penn wanted to wait for next scan to see how cancer is growing, but open in principle. Georgakis reconsidered and willing to do surgery!
- Recurrence an issue; may have to consider St Louis trial to reduce recurrence.
<https://clinicaltrials.gov/ct2/show/NCT01061515>
[https://www.semanticscholar.org/paper/Early-recurrence-after-cytoreductive-surgery-\(CRS\)-Tan-Chia/91f74bb32404062bda8d2f79bf1f37f4e116c5f8](https://www.semanticscholar.org/paper/Early-recurrence-after-cytoreductive-surgery-(CRS)-Tan-Chia/91f74bb32404062bda8d2f79bf1f37f4e116c5f8)
<https://medivizor.com/blog/SampleLibrary/colorectal-cancer/what-factors-predict-early-relapse-in-colorectal-cancer-patients-treated-for-peritoneal-metastases/>
- Laparoscopy of abdomen showed spread in omentum, fatty tissue, surface of stomach, and nodules near liver/anterior abdomen, but luckily intestines and rectum look still clean. EUS (Endoscopic ultrasound) showed rectum clean up to 18 cms from anal verge.

What Next? PIPAC?

- Israeli company says a cure in one year – too late for us even then!
<https://www.labroots.com/trending/cancer/13953/israeli-company-promise-cure-cancer>
<https://www.jpost.com/HEALTH-SCIENCE/A-cure-for-cancer-Israeli-scientists-say-they-think-they-found-one-578939>
- PIPAC: palliative if no CRS. But only in Europe. Trial in City of Hope, California?
<https://www.cityofhope.org/breakthroughs/surgeon-thanh-dellinger-on-options-in-the-abdominal-cancer-fight> <http://coloncancersupport.colonclub.com/viewtopic.php?t=56641>
<https://www.ncbi.nlm.nih.gov/pubmed/29931380/> <https://clinicaltrials.gov/ct2/show/NCT03294252>
http://ascopubs.org/doi/abs/10.1200/JCO.2018.36.4_suppl.149
<https://clinicaltrials.gov/ct2/show/NCT03172416> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4168082/>
- PIPAC as neo-adjvant before CRS? <https://wjo.biomedcentral.com/articles/10.1186/s12957-016-1008-0> or to reduce tumors/extend life? http://ascopubs.org/doi/abs/10.1200/JCO.2018.36.4_suppl.149
<https://www.sciencedirect.com/science/article/pii/S0748798315004837>
https://www.researchgate.net/figure/indications-for-PIPAC-a1-for-CRS-and-HIPEC-b-for-CRS-and-HIPEC-after-neoadjuvant_fig1_308763126 <https://www.hindawi.com/journals/grp/2017/4596176/>
<https://www.wjgnet.com/1007-9327/full/v24/i19/2130.htm>
<https://www.ncbi.nlm.nih.gov/pubmed/27678344/>
- Neoadjuvant & Adjuvant HIPEC: <https://www.ncbi.nlm.nih.gov/pubmed/29566715/>
<https://www.ncbi.nlm.nih.gov/pubmed/26003804/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5861332/> <https://www.mdedge.com/hematology-oncology/article/193053/gastroenterology/colopec-adjuvant-hipec-high-risk-colon-cancer> (disappointing results) ;
- NIPEC: (unheated) <https://www.degruyter.com/downloadpdf/j/pp.2017.2.issue-2/pp-2017-0012/pp-2017-0012.pdf>

What Next?

- Zaltrap instead of Avastin? Similar, but targets different modes, newer. More expensive (MSK does not use?). Worth a shot.

<http://www.ascopost.com/issues/february-25-2015/ramucirumab-added-to-folfiri-yields-results-similar-to-bevacizumab-or-aflibercept-in-second-line-colorectal-cancer/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3345882/>

<http://coloncancersupport.colonclub.com/viewtopic.php?t=37443>

<https://www.webmd.com/colorectal-cancer/guide/new-drugs-avastin-erbitux>

- Not much in new breakthrough therapies:

<https://www.focr.org/breakthrough-therapies>

- Trials Next- got to pick the best one!

What Next? Trials?

- Bispecific trial at Columbia starting in April 2019. similar to CAR-T Cell but with none of the wait. Need to get on waiting list! Sent note to DR Manji – disqualified because Lymphocytes less than 0.8! (maybe due to Zometa? Cimetidine?)

<https://www.researchgate.net/publication/16955432> Effect of cimetidine on T lymphocytes in a patient with giant benign gastric ulcer

<https://www.ncbi.nlm.nih.gov/pubmed/2657245/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3268204/> acute phase response <https://www.ncbi.nlm.nih.gov/pubmed/23748711/>

- TIL trial in NIH- even 15% success rate is hope. Need to time with other trials. Follow up with Beth
- CD47 has hopes: <https://www.quora.com/Will-there-be-a-cure-for-cancer-in-2019> <https://making-drugs.quora.com/Anti-CD47> several trials

What Next? Trials?

- Polymer Drug Nano-particles? Very effective in Lung mets ..
Experimental! Followup

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5908241/>

<https://www.ncbi.nlm.nih.gov/pubmed/29421609/>

What Next?

- Combo (gives a couple of months advantage) <https://www.medscape.com/viewarticle/909493> but really not very effective – number of CRC trials decreasing due to lack of success <http://www.ascopost.com/News/59792>
- Third line options limited (Regorafenib; TAS-102), minor survival advantage <http://www.hematologyandoncology.net/supplements/current-options-for-third-line-treatment-of-metastatic-colorectal-cancer/> oral mXeliri is also ok (5FU + Irinotecan) <https://www.sciencedaily.com/releases/2017/11/171118161438.htm>
- Israeli Cure? Or Hype? <https://www.quora.com/What-are-opinions-of-Israels-announcement-to-have-discovered-the-cure-for-cancer> at least a year or two away, need time.
- One of those 10% solutions (like Keytruda, NTRK, etc). Gene Markers tested by MSK: Test Performed: so far not good for Keytruda (no MSI-H); no NTRK Fusion, no Pole mutation <http://www.jnccn.org/content/15/2/142.short> , no HER2, also failed HLA matches for NIH, Roswell
 - Secondary Germline MSK-IMPACT
 - Tier1: APC,BAP1,BRCA1,BRCA2,CDH1,FH,FLCN,MEN1,MLH1,MSH2,MSH6,MUTYH,NF1,NF2,PA; LB2,PMS2,PTEN,RB1,RET,SDHAF2,SDHA,SDHB,SDHC,SDHD,SMAD3,STK11,TGFBR1,TGFBR2,T ; P53,TSC1,TSC2,VHL,WT1
 - Tier2: ALK,ATM,BARD1,BLM,BMPR1A,BRIP1,CDK4,CDKN2A,CHEK2,DICER1,EGFR,EPCAM,FAM ; 175A,GATA2,GREM1,HRAS,JAK2,KIT,KRAS,MAX,MET,MITF,MRE11A,NBN,NRAS,PAX5,PDGFRA ; ,PHOX2B,POLE,PTCH1,RAD50,RAD51,RAD51B,RAD51C,RAD51D,RECQL4,RUNX1,SMAD4,SMARC ; A4,SMARCB1,SUFU,TERT,TMEM127

What Next?

- KRAS drives metastases and prevents Immunotherapy to work. Some future hope:
[https://www.cell.com/cancer-cell/fulltext/S1535-6108\(19\)30103-5](https://www.cell.com/cancer-cell/fulltext/S1535-6108(19)30103-5)
<https://www.newswise.com/articles/view/709971/?sc=c9>
<https://www.newswise.com/articles/md-anderson-study-points-to-new-strategy-for-boosting-immunotherapy-effectiveness-in-advanced-colorectal-cancer>
- Avoid Steroids – they spread mets
<https://www.labroots.com/trending/cancer/14402/widely-prescribed-breast-cancer-medication-promotes-metastasis>
- Start Chemo as soon as you can – reduces mets and increases OS
https://www.medscape.com/viewarticle/729229_3
https://ascopubs.org/doi/abs/10.1200/JCO.2017.35.15_suppl.3605
<https://www.omicsonline.org/open-access/adjuvant-chemotherapy-for-colorectal-cancer-timing-is-everything-2167-7700.1000110.php?aid=14932>
<https://www.ncbi.nlm.nih.gov/pubmed/26900665/>
https://www.researchgate.net/profile/Weidong_Kong/publication/51192946_Association_Between_Time_to_Initiation_of_Adjuvant_Chemotherapy_and_Survival_in_Colorectal_Cancer_A_Systematic_Review_and_Meta-analysis/links/0f31753c3dea286c29000000/Association-Between-Time-to-Initiation-of-Adjuvant-Chemotherapy-and-Survival-in-Colorectal-Cancer-A-Systematic-Review-and-Meta-analysis.pdf <https://onlinelibrary.wiley.com/doi/full/10.1002/cncr.22316>

Supplement Trials

- **Metformin** <http://cebp.aacrjournals.org/content/27/5/525> <https://clinicaltrials.gov/ct2/show/NCT03359681>
just giving Sammy my Metformin <https://www.ncbi.nlm.nih.gov/pubmed/29954001>
<https://www.cnbc.com/2019/03/23/metformin-for-cancer-prevention-longevity-popular-in-silicon-valley.html>
- **Malaria Drug** <https://www.sciencedaily.com/releases/2014/11/141118091609.htm> **Artemisinin and Artesunate - giving Sammy Artemisinin supplement.** <https://www.news-medical.net/news/20180911/New-malaria-drug-starts-clinical-trials.aspx> trial of Chloroquine derivative (Jano found such trial in U Penn),
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5872176/> even Malaria itself kills cancer!
<https://www.independent.co.uk/news/science/cure-for-cancer-might-accidentally-have-been-found-and-it-could-be-malaria-a6693601.html>
- **Gomisin:** also reduced lung mets https://en.wikipedia.org/wiki/Schisandra_chinensis **magnolia berry or five-flavor-fruit ordered for Sammy** <https://www.frontiersin.org/articles/10.3389/fphar.2018.00986/full>
<https://www.semanticscholar.org/paper/Gomisin-A-Suppresses-Colorectal-Lung-Metastasis-by-Kee-Han/32da7ffc1163e571e32d748943ec09066a97c787> <https://www.spandidos-publications.com/or/41/1/711>
- Oral Green Tea & Milk Thistle Extract – just take the supplement
<https://clinicaltrials.gov/ct2/show/NCT01239095> <https://www.mountsinai.org/clinical-trials/oral-green-tea-extract-milk-thistle-extract-to-colorectal-cancer-patients-undergoing-resection>
- **Eat Nuts:** <https://blog.dana-farber.org/insight/2018/04/nuts-colon-cancer-whats-link/>
- **Or Drink Diet Soda!** <https://www.cancercompass.com/cancer-news/article/62178.htm>

Dr Kunle Odunsi Advice (Roswell)

- Oncolytic Viruses: Vaccinia type (like Pexa-Vec) better than adenovirus
 - ONCOS102 kills cells, also presents them to immune system, and GMCSF recruits immune cells to tumor environment; with checkpoint inhibitors prevents exhaustion of immune cells. Direct delivery to peritoneum helps. Results in CRC not exciting. Unfortunately, Pexavac also shows limited success.
<https://www.sciencedirect.com/science/article/pii/S1525001616302805>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5423497/>
<https://www.sciencedirect.com/science/article/pii/S1574789115000976>
<https://www.drugdevelopment-technology.com/news/sillajen-begins-phase-ii-trial-pexa-vec-colon-cancer/> <https://jamanetwork.com/journals/jamaoncology/fullarticle/2536204>
- Neo epitope Antigens (Rosenberg, NIH) – need more screening (IMPACT not enough). Roswell will have in 6 months- followup.
- Adoptive Cell therapies – depend on HLA status 02-01 ; solid tumor protocol – NY-ESO1 antigen and HLA expression- they also have a protocol if no NY-ESO1 expression, drug that enforces expression; in about 3 months trial starts. Check HLA status from NIH test. HLA typing difficult to match- **we did not match**
<https://bethematch.org/transplant-basics/matching-patients-with-donors/how-donors-and-patients-are-matched/hla-basics/>
https://en.wikipedia.org/wiki/Human_leukocyte_antigen

CRS + (no HIPEC!!)

- Dr Georgakis did the CRS on 3-20-2019; but! – did not do HIPEC (a surprise) and CRS was not complete (left a piece around hepatic vein, and also the peritoneum section under the diaphragm! Said hepatic vein was hard to clean, and doing the diaphragm required possibly an ileostomy – also too much impact on Sammy, surgery hard as it is. But with no complete CRS, we have a problem still. Did a wash with Pure Water, says “poor man’s HIPEC” may work as well. <https://www.cancernetwork.com/asco-colorectal-cancer/no-os-benefit-hipec-colorectal-cancer>
- Dr Stessin to radiate the missed CRS sections. https://link.springer.com/chapter/10.1007/978-0-387-48993-3_30 <https://gicasym.org/clinical-corner-role-intraoperative-radiation-colon-cancer-peritoneal-disease> <https://www.ncbi.nlm.nih.gov/pubmed/12788186/> [https://www.redjournal.org/article/0360-3016\(89\)90113-2/fulltext](https://www.redjournal.org/article/0360-3016(89)90113-2/fulltext) Dr Craig Grossman at Stony Brook also mentioned can be done, won't harm hepatic vein (just hardens), and can do diaphragm slice (can shape beam, may have to do several).
- Took part in anesthesia trial – GA-CARES Trial (General Anesthetics in Cancer Resection Surgery: Randomized pragmatic trial of propofol vs volatile inhalational Anesthesia). Sammy ended up with propofol, which supposedly reduces recurrence. Dr Elliot Bennett-Guerrero 1-919-812-3975; Darcy (w) 1-631-444-2970 (c) 1-631-921-1879 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4009629/> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5649999/>
- Removed: omentum, cleaned mesentery <https://en.wikipedia.org/wiki/Mesentery>, anterior – posterior abdomen wall peritoneum, right parietal peritoneum, pelvic peritoneum, small sliver of liver, iliac nodule. PCI was 26 (2 top, 3 3 3 mid, 3 3 3 mid, 3 3 bottom). After CRS, PCI is 6 remaining. Could remove surgically again in second CRS/HIPEC, but need 6-12 month period. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4765140/>
- Separate HIPEC? Only under trial protocol. But Dr Georgakis is working on getting a PIPEC trial from France just for Sammy.

CRS Effects

- Pleural Effusion (minor, expected) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2999156/>
<http://www.vancouversun.com/health/radical+hipec+cancer+procedure+gives+chance+life+some+patients+with+video/9777649/story.html> <https://pmppals.net/ask-arthur-continues-the-conversation-what-to-expect-after-hipec/> <https://www.mdedge.com/hematology-oncology/article/192729/gynecologic-cancer/crs/hipec-safety-concerns-may-be-outdated>
<https://www.ncbi.nlm.nih.gov/pubmed/25319584> <http://oncolex.org/Peritoneal-cancer?lg=print>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4168082/>
<https://www.medpagetoday.com/hematologyoncology/ovariancancer/77438>
- Pain (taking longer than expected, 2 bad weeks)
- Severe Diarrhea – between days 4-6 as expected; took that long for gassing to start. Later had constipation for 5 days, prescribed Colace (100mg, 3 times a day) and Miralax (2/day)
- Had an “almost seizure like” episode. Tests showed no seizure. Brain scans show polyps (old) and insignificant white matter hyperintensity (FLAIR)
<https://psychscenehub.com/psychinsights/white-matter-hyperintensities-mri/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3708193/> Hypoplastic cerebral artery may be partial cause? Brain scan shows mild atrophy, not serious, could recover
- Peritoneal treatment: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4818621/>
<https://utswmed.org/conditions-treatments/peritoneal-cancer/peritoneal-cancer-treatments/>
<https://clinicaltrials.gov/ct2/show/NCT00024271> (trial, not recruiting, Robert N. Taub, MD, PhD Herbert Irving Comprehensive Cancer Center, Columbia U.).
- Could get Clostridium *difficile* infection (very bad diarrhea) – close watch on any bowel effects.

Bottom Line

- Don't panic! Easier said than done, but fighting cancer requires wit and stamina.
- Read, learn, research: trust the oncologists, but help them out- they don't know everything
- Track your treatment, timing, options, prognosis, progression... Drs and Hospitals don't do a good job of that.
- Supplements (the right ones) help. Don't get scared by party-line advice from Drs and Integrated medicine.
- Eat well. Make every bite and drink count in the fight.
- Get your support network in place... family helps, especially in a tough fight. Stay positive - <http://www.healthyfoodhouse.com/scientists-proven-negativity-literally-makes-cancer-grow-inside-body/>
- Take it one step at a time... and hope for the best
- Pray... God won't leave his good people alone.